

Spring 2024

## **Arch 396-004: Studio VI on education, a course for radical wondering**

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### **Recommended Citation**

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# ARCH 396: STUDIO VI

## on education

a course for radical wondering

SoA HCAD\_NJIT SPRING 2024. M-R 1:00-5:20pm face-to-face. Office hours R 12:00pm/ by appointment.

INSTRUCTORS: 004 MARIA HURTADO DE MENDOZA (C), 006 JUDY CHOI, 008 ANDREA MOLINA, 010 JEFFREY RAUCH, 012 MATEI DENNES, 014 CHIT YEE NG, 016 KEITH BURNS, 018 FARAH ALKHOURY , 020 MIGUEL QUISMONDO

ARCH 396. Architecture Studio VI. 4 credits, 9 contact hours (0;0;9).

Prerequisites: ARCH 395 or ARCH 363. A continuation of ARCH 395.

The very possibility of education exists in “a radical form of **human experience**” – the awareness that “we are **unfinished**” – (Freire, 2014, quoted by Sergio Xavier).

### COURSE OVERVIEW:

Let's start with a few definitions for context: (Merriam-Webster Dictionary):

- . studio
  - the **working place** of a painter, sculptor, or photographer, **or an architect**
  - a place for the **study of an art** (such as dancing, singing, or acting), **or architecture; drawing, reading, making models, and much more.**
- . course
  - the act or **action of moving** in a path from point to point
  - the **path** over which something moves or **extends**
  - an ordered **process** or succession
- . education
  - the field of study that deals mainly with **methods** of teaching and learning in schools
- . radical
  - of, relating to, or proceeding from a **root**
  - of or relating to the **origin** : FUNDAMENTAL
  - very **different from the usual** or traditional : EXTREME
  - favoring **extreme changes** in existing views, habits, conditions, or institutions
- . wonder
  - to feel **surprise**
  - to feel **curiosity or doubt**

The second semester of third year studio (VI) builds on the logics of aggregation and modulation explored in the housing studio but incorporates simultaneously different type of programs, scales and users, hoping to find reasons for articulating as a congruent whole what is different in principle.

Now with a focus on education, the semester is organized in three parts, a first part is a quick, playful, case study oriented immersion (kindergarten), the second part is a trip to memory lane (high school), and a third part, that is a larger mixed used project addressing complexity at multiple levels (students center).

An opportunity to consider a broader creative (radical) relationship between circulation and program, and between program and the social consequences.

The semester is dedicated to architect master **Louis Kahn**, his work production, thinking and strategies.

## EXERCISES:

Premises: think fast, produce a lot, learn from your work. Investigate the problem through research and testing.

### EX VI.01. Kindergarten. Ground floor EX04 F23 Iron bound, Newark.

Launch: R January 18

Review: M February 5

Students work: single

### EX VI.02. High school in New Jersey

Launch: R February 8

Review: R March 7

Students work: team work in pairs

### EX VI.03. Students center in Princeton

Launch: M March 18

Review: R April 25

Students work: single

## LEARNING OBJECTIVES:

Expose and instruct students in: logics of aggregation, program-driven architecture, circulation strategies; by or through program, public/private relations, inside/outside relations, education, community life and culture.

Understand: publicness, program, circulation and means of egress, ordering systems, aggregation logics, open ended solutions, spatial quality, structural systems, buildings systems integration, disciplinary boundaries,

Promote: synthesis, rigor, negotiation, critical thinking, spatial complexity.

Skills: design integration, data management and optimization, construction methods, developing an architectural argument, precision, model making, advance software use.

## COURSE REQUIREMENTS:

### Attendance

- In person attendance to studio is **mandatory**. Students are required to stay and work in studio for the full length of each class day, unless activities are programmed that will be developed somewhere else.

- Students shall provide advance notice of any necessary absences and be excused by Dean of student's office.

The NJIT office of the Dean of Students (DOS) maintains a way for students to explain absences that instructors will use to regulate absenteeism. By providing verifiable documentation through filing an online [Student Absence Excuse Request](#) form related to the absences within 14 days, a student can ask for accommodation and that their absences not affect their grade. Once the absence has been verified, the DOS will communicate with the instructor. Nonetheless, the DOS only verifies documentation, and it remains the instructor's discretion to provide any accommodation and the student's responsibility to follow up with the instructor. Accepted reasons for absence include bereavement, medical concerns, military activity, legal obligations, or university-sponsored events.. Additional DOS information outlined [here](#).

<https://njit.service-now.com/sp?>

[id=sc\\_cat\\_item&sys\\_id=4b9bf5b31b2305904c82cddf034bcb94&sysparm\\_category=e5c8399d1b205110465ecb-b2604bcba6](https://www.njit.edu/dos/student-absence-verification)

<https://www.njit.edu/dos/student-absence-verification>

All instructors are asked to keep an accurate attendance log. If absenteeism is affecting a student's performance, the NJSOA strongly recommends issuing a warning notice mid-semester to remind the student of the grading consequences. If a student challenges a grade, and absenteeism was an issue, the appeals committee will request this log.

The information initially included in this syllabus may be supplemented later, such as by providing clarifying information on an assignment, the general scope, schedule, and the grading value here defined.

### Communication

- Please, feel free to talk or email your critic as needed.
- We will always try to help you in studio, one way or another we will find a solution for whatever issues you may have.

### Documentation

- It is very important that you thoroughly document every single thing you may produce during the semester. Every piece of work is important, or could be important if you bring enough attention to it. Documenting will help you keep track of your work and will nurture your memory of it.
- Remember to cite the source of all the research materials, author, date, location, where did you find it... (Including books, journals, websites, etc.)
- Take pictures daily; of your sketches, of your models, of the cover of the books you are reading, of interesting things you find along the way, of the reviews, your classmates, the school, etc. Build your own memory of the semester.
- Print frequently. What you see in your screen needs to be processed to become a good drawing, get use to doing that on a regular basis, and please DO NOT print to fit, use a proper scale. Pin your drawings where you can see them all the time.
- Studio work is very much about process, how you make ideas evolve from abstract to concrete (and vice-versa). Keep record of all stages, we recommend collecting everything in a .pdf file that we can go through anytime we need to check back ideas. Process and results will both be taken into account.
- It will be important to do all the drawings necessary to make the translation of the conceptual strategy and spatial mechanisms clear; embrace production and never feel lazy about drawing, best ideas always arise from previous work.

### Models and drawings

- Studio production will be based on physical models in parallel to the drawing work of any kind, specially BIM modeling. Feel encouraged to be creative and exploratory about the work you produce. Look at precedents of models, materials and techniques you like and learn from them. Feed your mind with great inputs to easier get great outputs.
- Physical models addressing "space" are highly encourage, that is, models that provide an spatial understanding of the project (both interior and exterior), rather than just a volumetric one. The use of multiple layer of thin materials is more than often a successful way of bringing together the abstraction of ideas with the complexity of the built.
- At this point of their education, students are expected to produce high quality architectural drawings, a full set of 2D drawings that incorporate all the various layers of information the project may require are considered a minimum for each of the three exercises, and from there it is up to the student's ambition to fully develop.
- Any personal exploration on drawing and representational techniques will always be welcome.
- Be rigorous, seek for beauty and enjoy!

### MEANS OF EVALUATION:

In the course of the semester there will be 3 major exercises, research assignments, and students will be expected to actively engage in the discussions of lectures and presentations.

The FINAL GRADE in studio is based upon a CUMULATIVE grading system; each exercise's value is a percentage of the overall studio grade:

EXIV. 01	15%
EXIV. 02	30%
EXIV. 03	45%
Studio culture; Attitude, punctuality and participation in studio	5%
<u>Research assignments, presentations and work production</u>	<u>5%</u>
Total	100%

Although each of the exercises is independent, they are sequential and iterative. It may be numerically possible to receive a poor grade on one assignment and make up the difference in later work, but as a practical matter, this will be very difficult. All projects taken together comprise a single semester-long investigation, and the exercises and assignments support and develop the skills critical for that investigation.

The design projects will be judged not simply on completeness, but, most significantly, on students ability to articulate an architectural proposition and argument, and clearly demonstrate how the design project responds to this proposition. Grade for participation depends on willingness to engage with the work of others and contribution to studio critiques and discussions as a whole.

Each student should carry a journal (sketchbook) where to take notes, make drawings and visually store observations along the semester, it will be helpful to keep track of ideas.

Assignments and reviews

- Students are required to follow the studio schedule and present on time all assignments and review materials as scheduled and requested by their instructor.
- Not presenting work at a required time represents a non passing grade for the un-submitted exercise.

## ACADEMIC INTEGRITY:

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: NJIT Academic Integrity Code. <https://www5.njit.edu/policies/sites/policies/files/NJIT-University-Policy-on-Academic-Integrity.pdf>

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at [dos@njit.edu](mailto:dos@njit.edu). Detailed guidance on academic integrity can be found at: [Best Practices document](https://www.njit.edu/provost/sites/njit.edu/provost/files/Best_Practices_related_to_Academic_Integrity.pdf). [https://www.njit.edu/provost/sites/njit.edu/provost/files/Best Practices related to Academic Integrity.pdf](https://www.njit.edu/provost/sites/njit.edu/provost/files/Best_Practices_related_to_Academic_Integrity.pdf)

## KEPLER POSTING:

You will receive more information regarding how many files to post on Kepler. All files must be renamed. Please fill out all of the metadata information. Images must retain their original proportions without being enlarged.

To distinguish PROCESS documents from FINAL documents, be sure to enter labeling information in the pull down metadata section built into each Kepler file. The filename should be saved according to the following naming convention: <Last name, First name ##.jpg>. You must login into the NJSOA network to fulfill this portion of the assignment.

Final presentations will be prepared in a way that will allow compilation in a booklet format and models will be exhibited at the end of semester. Please preserve and document them carefully.

## COURSE THEMES:

### Course Specific Themes:

- The built environment.
- Conceptual strategy
- Performance
- Education and culture.
- Society and culture.

### Course General Themes:

- Informed cells and aggregation (parts-to-whole relation)
- Bottom-up versus top-down decisions (and vice-versa)
- Specificity
- Education space catalogue; between activity and subjective dimensions of space
- Social comfort
- Public and Private (or Exposure and Intimacy)
- Structural Systems
- Repetition and Difference
- Geometrical strategies and relationship between 2d and 3d
- Circulation (horizontal, vertical)
- Site strategy
- suburban versus urban environment
- Mass/void strategy
- Envelopes and Enclosures
- Materiality
- Flexibility
- Interior Environments
- Furniture and Built-in
- Sunlight and ventilation
- Exterior - interior sequence and transitions
- Regulations and Codes
- Means of egress and accessibility

Key words for the semester are conceptual strategy and performance. The conceptual strategy starts with ideas about disciplinary questions. Performance, in the larger sense of the word, means paying attention to how life happens in the built environment and how architecture responds to uncertainty and contingency, from the more pragmatic aspects to the very high human aspirations.

## COURSE CRITERIA ACCORDING NAAB CONDITIONS FOR ACCREDITATION, 2020 .

The National Architectural Accrediting Board accredits NJIT's architecture program. The NAAB has Program and Student Criteria that must be covered by any architectural curriculum to attain their approval. This course satisfies the following criteria:

**Program Criteria (PC).** How are program criteria framed and addressed in ARCH 396:

**PC.1 Career Paths**— *How the studio ensures that students understand the paths to becoming licensed as an architect in the United States and the range of available career opportunities that utilize the discipline's skills and knowledge.*

Housing architecture is already a niche in the practice of architecture, students will get familiar with the terminology and the ideas behind living environments.

The first exercise is an open competition organized by a non-profit along with partner organizations that puts students in a professional-like competitive world.

It also includes the consideration of stakeholders and the potential client as an important aspect of the task.

Some of the sites chosen for the exercises are abroad, as well as many of the case studies, which helps to understand how the world is large and ideas multiple. This aspect resonates well with the diversity of our student body.

**PC.2 Design**—*How the studio instills in students the role of the design process in shaping the built environment and conveys the methods by which design processes integrate multiple factors, in different settings and scales of development, from buildings to cities.*

Expose and instruct students in: Density and Aggregation, Education as a Cultural Phenomenon, as Infrastructure, as Social Condenser (the society versus the individual), Public/Private Relations, Circulation Strategies in public buildings of different scales.

-Understand: Structural Systems, Construction Methods, Formal Ordering Logics, Unit Aggregation Logics, Disciplinary Boundaries, Spatial Quality.

-Promote: Synthesis, Rigor, Negotiation, Critical Thinking, Spatial Complexity.

-Skills: Design Integration, Developing an Architectural Argument, Precision, Data Management and Optimization, Architectural Drawing, Physical Model-making, Advance software use.

**PC.3 Ecological Knowledge and Responsibility**—*How the studio instills in students a holistic understanding of the dynamic between built and natural environments, enabling future architects to mitigate climate change responsibly by leveraging ecological, advanced building performance, adaptation, and resilience principles in their work and advocacy activities.*

Education architecture is an especially adequate field to learn how to leverage orientation, sun radiation and ventilation for different parts of the program. Test the possible divorce of the actions to light, to ventilate and to look beyond the regular window type. Address flexibility towards the winter/summer cycle.

**PC.4 History and Theory**—*How the studio ensures that students understand the histories and theories of architecture and urbanism, framed by diverse social, cultural, economic, and political forces, nationally and globally.*

The studio projects are proposed on real existing contexts around New Jersey. This variety of places, programs and demographics will present students with specific details foreign to their background and fosters the need to be curious about the un-familiar.

There will be a heavy use of precedents on education buildings as it is not possible to do buildings without studying and understanding their main components first.

**PC.5 Research and Innovation**—*How the studio prepares students to engage and participate in architectural research to test and evaluate innovations in the field.*

Innovations are always the result of a contemporary view on pre-existing knowledge. This course invites students to research on architectural design themes in general and on education more specifically to be revisited through a contemporary lens and mindset as source for the new.

**PC.6 Leadership and Collaboration**—*How the studio ensures that students understand approaches to leadership in multidisciplinary teams, diverse stakeholder constituents, and dynamic physical and social contexts, and learn how to apply effective collaboration skills to solve complex problems.*

Teamwork will ease the semester with one shared projects developed by students working in pairs. To think and have ideas will be as important as to listen and help other's thoughts how to formalize those ideas. We will have internal workshops and monographic sessions on regular basis fostering the group growth.

**PC.7 Learning and Teaching Culture**— *How the studio fosters and ensures a positive and respectful environment that encourages optimism, respect, sharing, engagement, and innovation among its faculty, students, administration, and staff.*

We encourage joint sessions, studio cohesiveness, open source, pin-ups, trips, and visits.

**PC.8 Social Equity and Inclusion**—*How the studio furthers and deepens students' understanding of diverse cultural and social contexts and helps them translate that understanding into built environments that equitably support and include people of different backgrounds, resources, and abilities.*

learned from ourselves, learned from others (sites and context). Bibliography

### **Student Criteria (SC): Student Learning Objectives and Outcomes**

How ARCH 396 design studio addresses the following criteria and learning objectives and assessment.

**SC.1 Health, Safety, and Welfare in the Built Environment**—*How the studio ensures that students understand the impact of the built environment on human health, safety, and welfare at multiple scales, from buildings to cities.*

All 3 exercises of the studio on education will consider and incorporate minimum lighting and ventilation of different spaces, minimum dimensions of components, parts, and spaces, and will consider protection from fall.

An experiential perception of the habitat will go beyond the minimum to enhance the conception of architectural space.

**SC.2 Professional Practice**—*How the studio ensures that students understand professional ethics, the regulatory requirements, the fundamental business processes relevant to architecture practice in the United States, and the forces influencing change in these subjects.*

All 3 exercises of the studio on education will be expressed in terms of Net area, Gross area, gross/net ratio, FAR and occupancy.

**SC.3 Regulatory Context**—*How the studio ensures that students understand the fundamental principles of life safety, land use, and current laws and regulations that apply to buildings and sites in the United States, and the evaluative process architects use to comply with those laws and regulations as part of a project.*

All 3 exercises of the studio on education will address code in two important aspects; 1. Accessibility (ADA) and 2. Means of Egress (how to enter and how to leave the dwelling unit and the dwelling assembly).

**SC.4 Technical Knowledge**—*How the studio ensures that students understand the established and emerging systems, technologies, and assemblies of building construction, and the methods and criteria architects use to assess those technologies against the design, economics, and performance objectives of projects.*

The semester projects are proposed to develop a specific type of building construction assembly, starting with balloon frame or light gauge metal framing (off the shelf materials), second with load bearing walls (masonry blocks, precast panels), followed by steel frame construction and lastly CLT panels on to concrete base.

Dimensional approach will introduce students to the qualitative aspects of those techniques.

**SC.5 Design Synthesis**—*How the studio ensures that students develop the ability to make design decisions within architectural projects while demonstrating synthesis of user requirements, regulatory requirements, site conditions, and accessible design, and consideration of the measurable environmental impacts of their design decisions.*

Architectural design is synthetic in principle. All decision would likely converge towards a holistic approach to the project, which will most probably have a primary conceptual approach to be supported and reinforced and never betrayed by the consideration of the contingent. A multilayered approach is expected to expand the higher level of complexity of housing projects.

**SC.6 Building Integration**—*How the studio ensures that students develop the ability to make design decisions within architectural projects while demonstrating integration of building envelope systems and assemblies, structural systems, environmental control systems, life safety systems, and the measurable outcomes of building performance.*

As a third-year student, housing studio project will expect a higher degree of integration in some building integration aspects than in others. In order of importance for the semester those will be integration of structural systems, building envelope systems and assemblies, passive environmental control systems and life safety regulations.



## CALENDAR:

\* Subject to change as needed.

### Kindergarten

\_Week 01 | jan 18

R jan 18

Joint studio presentation: Weston Hall Gallery, 2nd floor at 1pm  
**EX VI.01. Kindergarten. Ground floor EX04 F23 Iron bound, Newark.**  
L01. Lecture on kindergarten (mhm)  
RA01. Research assignment. Case studies.

\_Week 02 | jan 22-25

M jan 22

R jan 25

Super-jury. TBC  
Joint session WLH1. TBC  
Pin-up review. Conceptual approach, printed in 11x17" sheets, landscape format.  
Work model 1/16"

\_Week 03 | jan 29-feb 1

M jan 29

R feb 1

Desk critic. Circulation diagrams, program. Work model 1/16"  
Desk critic. Space, light and ventilation. Plans and sections, scale 1/8". Work model 1/8"

\_Week 04 | feb 5-8

M feb 5

#### **EX01 review.**

Final Physical model @ 1/8"=1'-0" and (1-2) 36x72" vertically oriented panels to include the following: sketches, concept diagrams (circulation, programmatic), collage, location plan, site plan, floor plans, sections, elevations, interior and exterior views (model photographs or constructed views), etc.

### High school

R feb 8

Joint session. presentation **EX VI.02. High school in New Jersey**  
RA02. Research assignment; program catalogue

\_Week 05 | feb 12-15

M feb 12

R feb 15

**TRIP?** Pin-up review. Suburban strategy. Work model 1/16". Program statement.  
Desk critic. Sectional strategy. Work model 1/16"

\_Week 06 | feb 19-22

M feb 19

Joint session WLH1. **Lecture (MQ)**

Pin-up review. Work in progress. Circulation diagrams. Work model 1/16"

R feb 22

Desk critic. Enclosure, material and presence; skin, panel, width, depth, texture, system, pattern.

\_Week 07 | feb 26-29

M feb 26

Joint session WLH1.

R feb 29

Pin-up review. Work model 1/8"

Desk crit

\_Week 08 | mar 4-7

M mar 4

Desk crit

R mar 7

#### **EX02 Mid-term review.**

Final Physical model @ 1/8"=1'-0" and (1-2) 36x72" vertically oriented panels to include the following: sketches, concept diagrams (circulation, programmatic), collage, location plan, site plan, floor plans, sections, elevations, interior and exterior views (model photographs or constructed views), etc.

\_Week 09 | mar 11-14

spring break

no class

## Students Center

_Week 10   mar 18-21		
	M mar 18	Joint studio session: presentation. <b>EX VI.03. Students center in Princeton</b> RA03. Research assignment. Contextual analysis; cultural and: physical, historical, social, urban, environmental, psychological, emotional. Elaboration of original materials.
	R mar 21	Site visit Princeton. Midterm warnings.
_Week 11   mar 25-28		
	M mar 25	Pin-up review Monster collage conceptual, programmatic and geometrical strategy. Work model
	R mar 28	Joint session WLH1. Desk critic
_Week 12   april 1-4		
	M april 1	Desk critic
	R april 4	Joint session WLH1. Pin-up review. work model
_Week 13   april 8-11		
	M april 8	Desk critic
	R april 11	Joint session WLH1. Pin-up review. work model
_Week 14   april 15-18		
	M april 15	Desk critic
	R april 18	Desk critic, Pre-final internal review.
_Week 15   april 22-25		
	M april 22	Desk critic. Editing
	R april 25	<b>EX 03 Final review. TBC</b>
_Week 16   april 29		
	M april 29	1pm Final deliverables; <u>Booklet</u> and complete Kepler uploading check. Exit interview
	<b>may 11</b>	<b>Final grades due</b>

## BIBLIOGRAPHY:

- Architecture: Form, Space, and Order by Francis D.K. Ching
- Architectural Graphics by Francis D.K. Ching
- Architectural Graphic Standards. Ramsley/Sleeper, AIA
- Lessons for Students in Architecture, Herman Hertzberger
- Le Corbusier Talks with Students, Le Corbusier
- Operative Design: A Catalog of Spatial Verbs, Anthony di Mari
- The Function of Style, Farshid Moussavi
- The Language of Architecture: 26 Principles Every Architect Should Know, Andrea Simitch and Val Warke
- Ten Canonical Buildings, Peter Eisenman
- Graphic Anatomy, Atelier Bow-Wow
- Architectural Diagrams, Pyo Mi Young
- Tectonica Online (Available Through Littman Library) . <http://www.tectonica-online.com/projects/>

For specific case studies see the individual exercise sheets.