

3501: Architectural Design Studio IV

Building Performance Studio

Instructor Information:

Name: Kentaro Tsubaki, R.A., Assistant Professor
 Office: RM 609, ARCHITECTURE BUILDING
 Office Hours:
 TR 1:30PM-3:00PM (other times by appointment only)
 Office Phone: 806-742-3169 x256
 E-mail address: kentaro.tsubaki@ttu.edu
 Course Website:
<http://web.mac.com/ktsubakix/iWeb/KT%20Studio%20KT/+Courses.html>

Course Information:

Name: Architectural Design Studio IV
 Number: 3501
 Catalogue description:
 Building frame and skin. Teaches design skills centered on the technology of enclosure in building design. Introduces life safety and building codes (5:2:8)
 Prerequisite: 2502 Architectural Design Studio III
 Credits: (5) semester credit hours
 Meeting Place: Room 703, Architecture Building
 Meeting Time: MWF 01:00-04:20 PM

Course Introduction:

Performative Architecture. Contextual/ projective. Emphasis on conceptual and productive design skills, which cultivates an understanding of the relationship between design information and construction information. The student learns that the digital tools expand the means of representation and production alike. The class focus is on a qualitative equilibrium – in particular structure, envelope and assembly as they perform and respond to the changes in environmental conditions with various materials and fabrication technologies.

In the past architects drew what they could build, and they were directly involved in building what they could draw. The studio will promote the emerging ability to generate digital design information which directly conditions the construction by describing the detailed design in three dimensions, and makes the time consuming production of hand drawings unnecessary – the new digital practice.

The guiding design principle is building performance in its fullest sense, where form making and space generation is extended to a qualitative performance simulation and such forms a comprehensive design approach. Selected process parameters are predominantly technical (site, climate, sun etc..) and redefine the students skills by adding another set of instrumentality.

The studio is intended as integrating the past and concurrent core courses such as construction, environmental controls, digital media and others, since it is the Prof. Tsubaki, K

interrelationships between site, program, architectural technologies, formal concerns, social responsibilities, etc..which form the crux of the course.

The students will be accountable for producing a building that draws together concerns for:

- a. sensitive site treatment (both experimentally and environmentally)
- b. a critical theoretical position about architectural design and its broader cultural role
- c. an awareness of the building's role in enhancing and nurturing the everyday life and functions that occur within it
- d. creation of sophisticated architectural form
- e. use of appropriate experimental character to reinforce moods and feelings
- f. responsible use of material resources, at best in a sustainable sense
- g. sensitive reaction to climatic conditions
- h. clear definition of structural, HVAC and circulation systems
- i. awareness of safety and regulatory compliance
- j. architecture which makes a clear contribution to its culture and the future

The studio is built upon the foundation of formal design strategies acquired in the second year studios and students must demonstrate both, conceptual and technical competence in building design.

Project Introduction:

"Nature in the form of water, light, and sky restores architecture from a metaphysical to an earthly plane and gives life to architecture. A concern for the relationship between architecture and nature inevitably leads to a concern for the temporal context of architecture. I want to emphasize the sense of time and to create compositions in which a feeling of transience or the passing of time is a part of the spatial experience."

Tadao Ando, "From the Periphery of Architecture"

performance |pər'fɔrməns| noun

- 1 an act of staging or presenting a play, concert, or other form of entertainment
- 2 the action or process of carrying out or accomplishing an action, task, or function

A building performance is not simply a technical predictability of its structural and environmental behavior nor an aesthetic legibility of the design ideas. It is an action, an ingenious response to various internal and external forces as they seek equilibrium through time.

Recent technological obsessions in architecture fueled by the perforation of sophisticated structural, environmental and visual computer simulations re-ignited the interest in building performance. However, these trends tend to limit its potential by merely re-affirming the old functionalist thinking - predicting the predictable. A good musical performance has an element of surprise, an unexpected experience as it is a response to the audience and the context. So does the performance of a building.

This studio will examine the complex nature of building performance through focused iteration, cultivating student awareness to temporal-spatial quality of physical construct as they develop technical proficiency in architectural design. The emphasis is on conceptual design skills dealing with qualitative internal equilibrium - structural, environmental and material in response to the change in ambient topographical conditions such as site, climate, wind, light and so on.

Architecture as a discipline aims to evoke emotional and intellectual response through phenomenal qualities (materiality/texture, light/shades, time/sequence, scale/proportion and spatial/structural order) beyond the basic human need for shelter. The pedagogical intention of the studio is to acknowledge the divide between phenomenal qualities of physical objects and representational methods employed in the design process. The studio intends to exploit this difference as a possible source for architectural exploration.

The First Phase of the studio (duration: 3 weeks) will begin with a discourse regarding the role of “architectural diagrams” as a generative tool. Precedent analysis of appropriate buildings with a focus on the treatment of natural lighting will complement the discourse. A small scale project to design and to construct a “Light Filtering Device” will follow.

The Second Phase of the studio (duration: 12 weeks) will consist of designing a building of intermediate complexity such as a library or a museum in urban context based on a careful observation (recording) and analysis of the “Light Filtering Device” constructed in the first phase.

“Performance” is an empirical process of improvisation and adjustment through trial and error, a self discovery process. “Student Performance” in this studio is also evaluated as such. Disciplined, self-directed recovery from a spectacular error is valued over mediocre success merely following the instructions.

Note: Field trip to Dallas / Ft. Worth metro area to visit following institutions will be a required

The Rachofsky House
The Modern Art Museum of Fort Worth
Kimbell Art Museum

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Expected Learning Outcomes:

Ability to produce schematic building design (Pre Design development level in professional terms) consisting of physical mock-ups, representational drawings and models, process studies; verbal presentations at formal reviews.

Featured NAAB Student Performance Criteria (2004) for this course:

1. Speaking and Writing Skills

Ability to read, write, listen, and speak effectively

3. Graphics Skills

Ability to use appropriate representational media, including freehand drawing and computer technology, to convey essential formal elements at each stage of the programming and design process

15. Sustainable Design

Understanding of the principles of sustainability in making architecture and urban design decisions that conserve natural and built resources, including culturally important buildings and sites, and in the creation of healthful buildings and communities

17. Site Conditions

Ability to respond to natural and built site characteristics in the development of a program and the design of a project

21. Building Envelope Systems

Understanding of the basic principles and appropriate application and performance of building envelope materials and assemblies

24. Building Materials and Assemblies

Understanding of the basic principles and appropriate application and performance of construction materials, products, components, and assemblies, including their environmental impact and reuse

General Methods:

Arch 3501 is a design studio course that requires a substantial dedication and investment of student time, skill, and critical thinking both during and after the official studio hours. Students are required to participate in all activities including critiques, lectures, discussions, and field trips. Production and hard work are expected. Extensive use of the Shop Facilities will be required for fabrication of large scale architectural mock-ups. Studio usually begins with a group pinup followed by the assignment, lectures, presentations, demonstrations, discussions, or individual critiques of projects as needed.

The studio promotes integration of analog (physical) design and fabrication techniques with currently available digital technologies. Digital media studies must be printed prior to studio time and displayed for daily pinups and formal reviews. Students are expected to have committed analog or digital representations and/or actual physical construct of a completed thought for each studio day to receive effective criticism. Mere verbal descriptions will not be critiqued. Repeated works or works with superficial changes that do not move the project forward will be ignored.

During group pinups, individuals are expected to carefully listen and absorb critiques towards others and apply what's relevant to their own. Not all projects will be addressed. Only new works, serious and significant, that contributes to the general progress of the studio will be discussed. Have all of your previously completed prints and models available in studio. We will need to refer to these works from time to time.

The schedule will be day to day, based on the progress of the class as a whole. Expect to spend a significant amount of time working on your studio project outside of class. The contact time is (10) hours per week. The expected work hours outside of the class is an average of 3 times contact time or (30) hours per week. It is strongly suggested that you get into the habit of working in the studio after hours. Experience has shown that students who work in studio after class hours on a regular basis have a greater degree of success in the course because they can discuss, clarify, and exchange ideas and methods with colleagues.

Required Computer:

Students are required to provide and maintain their own computers for use during studio. See the college website for minimum specifications. Technical difficulties, viruses, crashes, server and print bureau problems, or corrupted files will not be accepted as legitimate excuses. ALL WORK SHOULD BE CONTINUOUSLY SAVED AND REGULARLY BACKED UP.

Required Printer:

Laser or ink-jet printer at your desk in studio.

Required Camera:

Digital Camera w/ minimum of (2MG) pixel resolution.

Required Software:

auto•des•sys form•Z and Adobe Creative Suite (Photoshop, Illustrator, Acrobat, etc.), AutoCad.

Required at your desk:

Despite the fact that you are using computers and printers extensively, each student must have the following readily available: Architect's Scale, Engineering Scale, rolls of white or yellow trace along with the materials mentioned above.

Required Materials:

For this studio you will need to purchase several drawing and model-making tools, and additional consumables as the course progresses and assignments are made. Materials include: pens, pencils, paint, gesso, vellum, tracing paper, bond paper, acetate, acrylic sheet, plastic, fabric, metal, basswood, mdf, plywood, blue or pink foam, foam-core, paper, cardboard, chipboard, museum board, hyrdocal, etc.; healable cutting boards, metal straight edges, triangles, x-acto knives, etc. Extensive use of scanning, color ink jet and laser printing.

Required Analog Journal:

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Students must keep a journal of studio thoughts and ideas (sketches, drawings, notes, articles, photos, xeroxes). The journal is crucial to reflective thinking and a vital record of key concepts and explorations considered in your project. Have your journal available in class everyday.

Required Digital Portfolio:

Digital scans, drawings, and images of physical models will be submitted according to specified formats at designated times throughout the semester. Files are uploaded to the server at: \\archlab\KT_3501

Required Readings and Articles:

Will be assigned throughout the semester.

Environmental Responsibility:

Aerosol paints, spray glues, super-glues, or fixatives, etc. must not be used. Violators will **FAIL** the course.

Attendance Policy:

Students are responsible for attending class. Four absences are considered excessive and constitute cause for having the student drop the class or receive a grade of "F". Whether an absence is excused or unexcused is determined solely by the instructor with the exception of absences due to religious observance and officially approved trips according to the guidelines specified in the TTU catalog. Students are expected to comply with TTU rules for reporting student illness requiring absence from class for more than one week, or immediate family deaths. Students are required to work in studio during studio hours. Work in studio requires students to have their computer, printer, drawing tools, materials, and supplies available for class at all times. Work includes participation in pinups, lectures, and discussions. Failure to work in class with undivided attention, any tardiness, leaving early, lack of participation, general socializing, goofing around, disruptive behavior, etc. will count as absences. You are not allowed to work on assignments from other classes during this class.

Academic Integrity:

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and a high standard of integrity. The attempt of students to present as their own any work that they have not honestly performed is regarded by the faculty and administration as a serious offense and renders the offenders liable to serious consequences, possibly suspension.

Civility in the Classroom:

Students are expected to assist in maintaining a classroom environment (during or after hours within the studio environment) that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class. More information on this topic is available

online at:
www.studentaffairs.ttu.edu/vpsa/publications/civility.htm

ADA Statement:

Any student who because of a disability may require special arrangements in order to meet course requirements should contact the instructor as soon as possible to make any necessary accommodations. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 806-742-2405.

Academic Regulations:

Please consult the Texas Tech University 2006-07 Catalog, (pp. 47-51) for information about Dropping a Course, Class Attendance, Reporting Illness, Absence Due to Religious Observance, Absence due to officially approved trips, Academic Integrity, Civility in the Classroom, and Grading Practices. Equal Opportunity statement is on p. 4.

Architecture Building:

Students must comply with ALL requirements of the Architecture Building Policy posted on the college web site at: www.arch.ttu.edu/Architecture/

Student Work:

The College of Architecture reserves the right to retain, exhibit, and reproduce work submitted by students. Work submitted for grade is the property of the college and remains as such until it is returned to the student.

Grading/Evaluation:

Evaluation of student performance in Arch 3501 is based upon daily studio process as well as the product. Im-

provement and growth are the keys. Professor Tsubaki will conduct his expert assessment of overall student performance following each major stage of the semester. Note that this is not a quantifiable, exact, mathematical assessment. It is based on experienced judgment of student work. The following general criteria will be considered: (1) strength of idea; (2) articulation and development; (3) technical competency, clarity, and craft; (4) concise verbal/written presentation; (5) passion, commitment, dedication and work ethic. All requirements and deadlines must be met in a timely manner. There will be no extensions to due dates. Late or incomplete work will result in a substantial reduction of the semester grade defined as follows:

A (excellent) exceptional performance; strongly exceeding the requirements of the course, showing strong academic initiative and independent resourcefulness.

B (good) performance above the norm; accurate and complete; beyond the minimum requirements of the course; work demonstrates marked progress and initiative.

C (average) satisfactory work that adequately meets minimum requirements and demonstrates satisfactory comprehension, communication skills, and effort; demonstrates little initiative to investigate the problem without substantial prodding of the instructor; work shows little improvement.

D (inferior) unsatisfactorily meets minimum requirements; demonstrates minimum comprehension, communication skills, and effort at an inferior level; initiative lacking; improvement not noticeable.

F (failing) does not meet minimum requirements; fails to adequately demonstrate comprehension, communication skills, and effort.

KT Studio Calendar (subject to change/adjustment)

Meeting	Date	Agenda	CoA Events
Week 1			
1	08/27	Studio Introduction / Lottery	FIRST DAY OF CLASSES
2	08/29	Phase I	
3	08/31		
Week 2			
	09/03		LABOR DAY
4	09/05		
5	09/07		
Week 3			
5	09/10		
6	09/12		LAST DAY: For student-initiated drop on the Web
7	09/14		

Week 4			
	8	09/17	
	9	09/19	
	10	09/21	Phase I Review
Week 5			
	11	09/24	Phase II
			LAST DAY: To withdraw from the university
	12	09/26	
	13	09/28	
Week 6			
	14	10/01	
	15	10/03	
	16	10/05	Field Trip to Dallas / Ft. Worth
		10/06	Field Trip to Dallas / Ft. Worth
Week 7			
	17	10/08	
	18	10/10	
		10/12	FALL BREAK
Week 8			
	19	10/15	
	20	10/17	
	21	10/19	
Week 9			
	22	10/22	
	23	10/24	MID-SEMESTER GRADES DUE
	24	10/26	Phase II Midterm Review
Week 10			
	25	10/29	
	26	10/31	LAST DAY: To drop a course
	27	11/02	
Week 11			
	28	11/05	
	29	11/07	
	30	11/09	
Week 12			
	31	11/12	
	32	11/14	
	33	11/16	
Week 13			
	35	11/19	
		11/21	THANKSGIVING HOLIDAY
		11/22	THANKSGIVING HOLIDAY
		11/23	THANKSGIVING HOLIDAY
Week 14			
	36	11/26	
	37	11/28	
	38	11/30	Phase II Final Review
Week 15			
	39	12/03	LAST DAY: To withdraw from the University
	40	12/05	
		12/06	LAST DAY OF CLASSES
		12/07	Web for Faculty available for grading

Week 16			
	12/11		GRADES DUE: For Graduating students
41	12/12	Class will meet during FINAL EXAM (12:30PM-1:30PM)	
	12/13		FALL SEMESTER ENDS
Week 17			
	12/17		FINAL GRADES DUE