Fall 2018: Garrison Studio

"The confluence between design and technology"

ARC 561C COMPREHENSIVE STUDIO MWF 1pm-6pm Instructor: Michael Garrison Office Hours: Thursday 11:00am-12:00 noon, in GoI 4.104, or by appointment mgarrison@utexas.edu | 512-632-1972 **PREREQUISITES Fall 2018:** ARC 520E (formerly 520L) and ARC 520G (formerly 530T) with a grade of at least C in each; registration for ARC 335M; and satisfactory completion of third-year portfolio review

Energy Center by ZGF Architects, Palo Alto, CA

GARRISON STUDIO OBJECTIVES

The objective of this studio is to introduce advanced design level students to a process that describes the confluence between design and technology. This studio will concentrate on the ways in which the nature of building systems affects and inform architectural design. Knowledge acquired in previous technology courses will be developed and applied to a mixed-use building project that will emphasize design and the preparation of construction documents.

The course also introduces students to an expanding understanding of the use of materials and methods of construction and their application to details. A major dimension of the project will be to integrate the design of tectonic systems, materials, assemblies, environmental control systems, building codes, envelopes, and industry standards, that deploy renewable energy - and to connect various technologies - building, computational, service, and other emerging technologies as a part of the design and technical design presentation process.

The studio will also address issues of building performance and respond to environmental conditions. Each student will identify environmental challenges for the design on the site, and in turn demonstrate how their design tracks and responds to this condition from the scale of the building's massing down to individual details.

COMPREHENSIVE STUDIO DESCRIPTION

The comprehensive Studio emphasizes architecture as a tectonic expression. Projects are expected to address the full range of potential issues embodied in an architectural design; however, aspects that directly impact how projects exist in the physical environment, including site relationships and materiality/construction, w

ill be a particular concentration. Therefore, the studio will have a strong focus on the design implications of technical issues, particularly their potential for design generation and as a repository of meaning. In addition, the thoughtful design and craftsmanship of presentation documents at all phases and scales will be emphasized.

Issues of construction and assemblies are framed within a set of concerns that are present in any type of construction, such as expansion & contraction, moisture infiltration and evacuation, ventilation, primary and secondary structure, logic of connections, differential settlement, etc. Particular attention will be given to the nature of detail drawings and the final product produced by the students will result in a presentation package that will be comprehensive in content and scale.

METHODOLOGY

The primary subjects of the studio are the design potentials of techniques of building and siting. While students will be expected to produce exquisitely crafted documents of their design proposals at the site, building, and detail scales.

General material and format considerations will be suggested by the instructor throughout the course, however, investigation and experimentation are strongly encouraged at all stages of production and design. In addition to digital production methods, portions of the studio process will include hand sketches and drawings as well as physical models; students should equip their studio workspace appropriately.

PROJECT PROGRAM: *Austin Green Building Program design center*

Students will work in teams of two on the design of a new 25,000-square foot Austin Green Building Program (AGBP) design center at the Muller Development in Austin, that will include, offices for the AGBP, exhibition galleries, classrooms, auditorium and building laboratories, along with shop, storage, and support spaces. The building design problem will investigate the evolution from thin skin buildings to thick skin buildings emphasizing responsive building envelopes and intestinal envelope spaces. The building should be pedagogical, demonstrating best building design ideas in green building, water harvesting, on site-waste management, embodied energy and interior air quality/The spatial and formal configuration of the building should celebrate, identify, and describe how you demonstrates the best ideas of enhancing building operational performance, sustainable design and aesthetic design.

View of proposed site, looking south on McBee Street, Mueller Neighborhood, Austin Texas

Site master plans should propose organizing development plans, locating critical facilities, building adjacencies and opportunities in responses to Muller urban design district planning and site characteristics such as soil, topography, vegetation, microclimates, transportation links, service requirements and watershed assessment.

Primary goals

a. Analyze site conditions (including existing buildings)
b. Respond to site characteristics such as soil, topography, vegetation, and watershed in the development of project design
c. Understand principles of environmental systems such as passive heating and cooling, daylighting, solar orientation, and acoustics

References (See Box for Studio Readings)

1. A Case for Why Green Design Must Be Beautiful: https://www.fastcompany.com/1672322/for-green-design-to-hava-chance-it-should-be-beautiful
2. The Shape of Green: Aesthetics, Ecology & Design by Lance Hosey: http://181.198.63.90:8081/DOCISDI/LE/LE-400/LE-400.pdf
3. Thomas Herzog, Roland Krippner, and Werner Lang: *Façade Construction Manual*,
4. Christian Schittich, Werner Lang, and Roland Krippner: *Building Skins,*
5. Muller Green Resources Guide 2012: https://utexas.app.box.com/file/156809623328
6. AEGB 2016 Commercial Guidebook pdf: https://utexas.app.box.com/file/137702456517

LEARNING OUTCOMES

Students will focus on developing abilities in the following learning outcomes, with emphasis on architecture as a tectonic expression: structural systems, construction methods and materiality, assembly, and spatial and formal compositions.

Design + Composition

Students develop the ability to prepare a comprehensive program for the project while assessing both client and user needs. The program analysis, along with critical thinking skills developed in previous studios should inform the spatial and formal compositions of the project. The design should respond to analysis and reviews of site, relevant laws and standards.

Sustainability

Ability to design projects that optimize, conserve, or reuse natural and built resources, provide healthful environments for occupants and users, and reduce the environmental impacts of building construction. Respond to site characteristics such as soil, vegetation, and topography.

Systems

The design should address environmental systems, structural systems, building envelope, building materials and assemblies.

- Environmental Systems – solar orientation, active and passive heating and cooling, daylighting and artificial illumination, indoor air quality

- Structural Systems – understanding of forces on a building, appropriate selection and application of structural system.
- Building Envelope – appropriate application of building envelope systems and associated assemblies relative to thermal transfer, moisture, performance, and aesthetics.
- Service Systems – understanding of basic principles of plumbing, electrical and vertical transportation systems
- Building Materials and Assemblies – appropriate selection of construction materials, products, components and assemblies.

Life Safety
Ability to apply basic life safety principles to design, including egress requirements.

STUDIO CULTURE
The School of Architecture believes in the value of the design studio model. Studio learning encourages dialogue, collaboration, risk-taking, innovation, and learning-by-doing. The studio offers an environment where students can come together to ask questions and make proposals, which are developed and discussed among classmates, faculty, visiting professionals, and the public-at-large. Studio learning offers intensive one-on-one instruction from faculty members and provides the opportunity for each student to develop his/her critical thinking skills and spatial and material sensibilities. The design studio offers a synthetic form of education, where project-based learning becomes the foundation for developing an understanding of and commitment to the school's core values — broadmindedness, interconnectivity, professionalism, exploration and activism — all in service of architecture's fundamental mission: to improve the quality of the built and natural environments.
https://soa.utexas.edu/programs/architecture/architecture-studio-culture

DESIGN CONVERSATIONS: LECTURES
The School of Architecture offers a wide range of opportunities for students to extend the design conversations taken place in studios (Lecture Series, Goldsmith Talks, Exhibitions, etc). Students are encouraged to participate and be engaged. Students in studio are expected to attend all the Jessen Lectures (three per semester by lead practitioners from around the world). The lectures and the group discussions in studio that follow are important for the holistic education of intellectually engaged students and participation will have an impact on students' grades (see below).

EVALUATION CRITERIA
While each project contains certain quantifiable elements for evaluation, a significant portion of each grade is derived from broader and more subjective criteria.

Student work will be evaluated according to its rigor and evolution over the semester. Grades are subject to deductions for late arrivals, absences, and late or incomplete work at the discretion of the instructor.

Grading for an assignment is broken into four components, each of which is given roughly equal weight:

Pursuit: the consistent and rigorous development and testing of ideas.
- The ability to formulate a query or thesis and pursue a self-determined concomitant method of inquiry
- The ability to identify and implement various processual mechanisms (software, sketch drawing and models, etc.) in the development of the design
- Initiative as demonstrated in work ethic – Does the student do what is asked; go beyond what is asked; direct their own efforts; eager to produce the next iteration of the design?

Grasp: the ideas and understanding of the project at hand and integration of knowledge introduced in companion courses.

- A strong and clearly stated design objective
- Spatial acuity as demonstrated in plan – including reasonable disposition of programmatic elements – and sectional development
- Synthetic and critical thinking; the ability to holistically organize a project as demonstrated through creative engagement with issues of materiality, structures and construction, structural and environmental system integration, building materials and assembly, sustainable practices, etc. in support of the design objective
- Structural competence and material sensitivity as demonstrated in wall thickness, floor plates, and assembly

Resolution: of the design objective; the demonstration of competence, completeness, and finesse in the final design presentation.

- Quality of presentation; clarity of communication; appropriateness of media strategy and level of skill displayed through the work presented at all stages of the design process; technical documentation

Engagement: the active participation in studio activities, leadership, collaboration, group discussions and reviews.

A student must earn a letter grade of C or better in order for the course to count towards a degree in the School of Architecture and to progress in to the next studio. A letter grade of C- will not satisfy degree requirements.

GRADE DESCRIPTIONS

A/A- **Excellent**
Project surpasses expectations in terms of inventiveness, appropriateness, visual language, conceptual rigor, craft, and personal development. Student pursues concepts and techniques above and beyond what is discussed in class. Project is complete on all levels.

B+/B/B- **Above Average**
Project is thorough, well presented, diligently pursued, and successfully completed. Student pursues ideas and suggestions presented in class and puts in effort to resolve required projects. Project is complete on all levels and demonstrates potential for excellence.

C+/C **Average**
Project meets the minimum requirements. Suggestions made in class and not pursued with dedication and rigor. Project is incomplete in one or more areas.

C-/D+/D/D- **Poor**
Project is incomplete. Basic grasp of skill is lacking, visual clarity or logic of presentation are not level-appropriate. Student does not demonstrate the required competence and knowledge base.

F **Fail**
Project is unresolved. Minimum objectives are not met. Performance is not acceptable. Note that this grade will be assigned when students have excessive unexcused absences.

X **Excused Incomplete**
Can be given only for legitimate reasons of illness or family emergency. Simply not completing work on time is not an adequate cause for assigning this evaluation. It may only be used after consultation with the Associate Deans' offices and with an agreement as to a new completion date. Work must be completed before the second week of the next semester in which the student is enrolling, according to the School of Architecture policy.

ATTENDANCE
Punctual and regular attendance is mandatory. Participation is expected. With four (4) unexcused absences, the student's final grade for the course will be lowered by a full letter grade. The final grade will be lowered by a full letter grade for each unexcused absence thereafter. Aside from religious observances, absences are only excused with written documentation of a medical issue or family emergency. The student is responsible for completing work missed due to excused absences and initiating communication with the instructor to determine due dates.

If a student is late (45 minutes after the start of class) three (3) times, it will be counted as one (1) unexcused absence. Students should notify the instructor prior to class if lateness or absence is known in advance. Students must notify instructors directly regarding lateness or absences; Asking a classmate to inform the instructor is not acceptable.

RELIGIOUS OBSERVANCES
A student shall be excused from attending classes of other required activities, including examinations, for the observance of a religious holy day, including travel for the purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. University policy requires students to notify each of their instructors as far in advance of the absence as possible so that arrangements can be made.

ACADEMIC INTEGRITY
Students who violate University policy on academic integrity are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on academic integrity will be strictly enforced. Refer to the Student Conduct and Academic Integrity website for official University policies and procedures on academic integrity:
http://deanofstudents.utexas.edu/conduct/academicintegrity.php. http://catalog.utexas.edu/general-information/the-university/#universitycodeofconduct

CARE PROGRAM
Counselors in Academic Residence (CARE) Program places licensed mental health professionals within the colleges or schools they serve in order to provide better access to mental health support for students who are struggling emotionally and/or academically.
BTL 114B | (512) 471-3115
https://cmhc.utexas.edu/CARE_dannenmaier.html

STUDENTS WITH DISABILITIES
Students with disabilities who require special accommodations must obtain a letter that documents the disability from the Services for Students with Disabilities area of the Office of the Dean of Students (471-6259 voice or 471-4641 TTY for users who are deaf or hard of hearing). This letter should be presented to the instructor in each course at the beginning of the semester and accommodations needed should be discussed at that time.
http://diversity.utexas.edu/disability/

SECURITY, SAFETY, AND THE STUDIO
The studio is an exceptional learning environment. Since it is a place for all, it necessitates the careful attention to the needs of everyone. All spraying of fixative, spray paint, or any other substance should be done in the shop. Security is a necessary component for a studio that is accessible to you and your colleagues 24 hours a day, 7 days a week. Do not leave your studio without your studio key and do not leave your studio unlocked. Hold yourself and your studio mates accountable for the security of your shared space.