Premise: When we emphasize the technological aspects of architecture and separate them from the whole creative process, we do a disservice to education. Moreover, we are just repeating the mistake of the Victorians by encouraging further the separation of architecture and construction ... a question often asked by educators is, how do we integrate construction technology into the design studio? I suggest that they have asked the wrong question. The question presupposes that the construction process is a supportive function of and ancillary to the design process. It is my contention that construction is part of and essential to the design process; and without it, the design process makes no sense except in the abstract, since it deals only with limited issues and can never be realized without the means – construction.

Gerald R. McSheffrey ARCHITECTURAL RECORD June 1985

Description: This studio begins the third and final year of the core program in the undergraduate architecture program. The year continues the investigations about the thoughtful making of buildings, within an increasingly holistic pedagogical framework, and with an increased focus on the building envelope and building tectonics. Third year studio deliberately revisits many issues of the previous year but within the context of a more comprehensive practice of architecture.

The primary design theme of the fall semester will focus on issues of materiality, assembly, structure and enclosure. The students will be asked to consider the design relationships and opportunities presented between different material assemblies and structural systems and their impact upon the design and decision making process of architectural design. The studio will build on the previous four semesters of study but with a focus on the physical reality of buildings and their construction. The semester will begin with a series of design projects that address specific building materials, (wood, steel and concrete) and conclude with the design of a warehouse/distribution facility project that allows the opportunity for the students to apply the lessons learned from the initial design exercises.
Objectives:
The fall semester third year studio will build on the previous four semesters of study and introduce to the students the knowledge fundamental to the development and the realization of architectural space and form through investigations of, and a focus on, the physical reality of buildings, their construction, context and use. After completion of the studio a student should be able to:

• Demonstrate an understanding of how materials and building systems influence the order of buildings and an understanding of the principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of simple contemporary structural systems.

• Demonstrate an understanding of the basic principles and appropriate application and performance of building envelope materials and assemblies including issues of orientation and sun and shade.

• Demonstrate the ability to use appropriate representational media, including freehand drawing and computer technology to convey the use/program, environmental response, material, assembly methods, and structural systems of a building.

Content:
The content of the studio is to deal in a holistic way with building design. The following set of issues will be presented and will constitute the dialogue and design exercises which will occur in the design studio.

• Tectonics (from the Greek word tekton, meaning "builder"): consideration of the physical conditions of architecture, including the logical application of materials and systems of assembly. These issues will be considered as the relationship between structure, envelope and finish/detail conditions, particularly on the building envelope.

• Enclosure/Program: consideration of the relationship between human behavior and the physical environment, including how people will experience, use and occupy the space.

• Envelope: consideration of the buildings edges and surfaces, both in terms of their tectonic order as well as the response to the issues of climate and environmental control.

Terms and ideas dealing with visual order, form, spatial order and the natural and built context have been introduced in considerable detail in your previous studios. This studio will deal with integrating them at the scale of buildings of moderate complexity.

Method:
The complexity and broad range of materials dealt with require a variety of educational methods and techniques. An organized sequence of design projects forms the core, augmented by lectures, seminars, guest speakers, field trips, assigned readings, handouts of supplemental information, and team teaching/discussions.

The typical design projects will be structured so as to take advantage of the Group Effort in the early stages of a problem concluding with individual proposals to the identified problem and possible alternative solutions. Analytical/Precedent exercises allow you to investigate architectural issues as they are exemplified by particular works of architecture. Design projects encourage you to elaborate these issues under more synthetic circumstances. The design processes will be cyclical and iterative allowing successive phases of exploration to inform design refinement. Obviously quite a lot of material will be covered. To benefit from the size of class, a strong willingness to work in groups must precede the need to work individually. Through cooperation we will be able to achieve much more and learn from what others can do or know. Hand and computer representation techniques will be emphasized throughout the course. Small group reviews, pinups, desk critiques and juries will serve as the principle means by which you receive feedback and constructive criticism during the semester.
Evaluation: Design reviews; desk critiques and evaluations serve as the primary means for receiving feedback and constructive criticism of your work. Evaluations of your performance in this class are based on: (1) the Quality of the work that you demonstrate in the execution of studio assignments; (2) your effectiveness in communicating ideas clearly and systematically at desk critiques and design reviews; (3) your willingness and ability to respond thoughtfully to feedback and criticism of your work; and (4) the insight and clarity of oral and written feedback you supply to your peers.

A student's final grade will be a weighted average of the grades received for each phase of the semester long design project.

• (3) Initial Projects addressing issues of material and their construction (each worth 10%)
• Final Project: Initial Concept Development & Schematic Design (10%)
• Final Project: Precedent Investigation of materials, assembly and structure (10%)
• Final Project: Design Development including Envelope Sections & Physical Models (40%)
• Participation, Contribution to Studio Discussion & Development (5%)
• Final Studio Portfolio Submission (5%)

A Excellent; could hardly be better. Exceptionally competent work completed in a superior manner representing significant growth of skill and comprehension
B Good; illustrates better than average understanding and control of information and processes in addition to possessing a good sense of design understanding and control.
C Satisfactory; work meeting all requirements, is adequately completed and shows average understanding of information in design abilities.
D Poor/Unsatisfactory; work shows an inability to execute work at satisfactory level, lacking in both understanding and process.
F Failing; incomplete visual communication or not meeting the constraints of time or seriously lacking in design concerns.

Grades are not simply given by the faculty; the student earns them. Here are some suggestions, which can help, give you a fair evaluation: First, it is important (imperative!) that you work in class and have work done for class on time. Second, class discussions of your ideas and proposals for solutions are critical for our (and your) understanding of what you are doing. Good criticism can only occur when there is something to discuss. Verbal ideas and proposals are too formless and vague - the conflicts are too easily overlooked. What you intend to do, how you intend to do it, and finally what you actually do, are three quite separate issues. Though the connections may seem clear to you, they are probably not so clear to anyone else. Third, your fellow students are your greatest resource. Look around, talk to each other, and see how others are solving similar problems. Help each other. Students will receive a grade for each design exercise. These evaluations will be given out to individual students at mid-semester and again at the end of the semester. The mid-semester meeting is the best time to recognize your strengths and weaknesses and for us to discuss ways to improve your performance in class.

As a UNC Charlotte student you have the responsibility to be familiar with and observe the requirements of the UNCC Code of Student Academic Integrity. This code and policies will be strictly followed. All written and graphic submittals, in-class presentations, and other academic tasks should be your individual and original work unless specifically noted as group projects. University guidelines for defining sexual harassment are now very broadly defined as causing a fellow student to simply feel discomfort because of his or her gender or sexual orientation is a violation of the guidelines. Students must be cognizant of their actions and conversations in this regard.
Required Text

References:
The following will provide good references for the issues you will encounter in studio:

Note: Additional Readings will be assigned during the course of the semester by each studio instructor and placed on the class resource folder on Canvas.

Materials:
Journal/Sketchbook to record your semester's work. Freehand drawing equipment, access to a computer and appropriate software, markers, sketch pads, tracing paper, architectural scales, model building equipment/materials, etc.

Software:
The studio will provide opportunities for you to continue to develop your abilities in utilizing the computer in your process of design. You have been introduced to a number of different programs over the past two years and you will be asked and expected to continue to use those programs in your work. You will also be introduced to additional software programs to expand the breadth of your exposure to the tools available. Backup Your Work: You are responsible for backing up all work that you produce digitally. You will be held responsible for any work lost which is more than 24 hours old. Backup your work every 24 hours.

Attendance:
All students in this course are expected to possess and maintain a studio workstation throughout the semester. Attendance at studio meeting hours is mandatory and preparation for desk critics and participation in pin-ups is expected without exception. Failure to maintain consistent and progressive activity in all course components will result in reduced grades. Attendance and completion of all assignments on time is mandatory. **Two (2) unexcused absences automatically lower your final grade one letter grade. More than two (2) unexcused absences will constitute grounds for automatic failure of this course.** Documentation of excused absences must be submitted in writing and show evidence of the medical or family emergency. When possible, notify your instructor as early as possible in advance of a potential absence. Late work will not be accepted, and will not receive credit. If you are unable to complete an assignment due to an excused absence, notify the professor on the due date and turn in the assignment at the next class meeting. Failure to turn in two assignments on their due dates is grounds for automatic failure of the course.
If you have a disability that qualifies you for academic accommodations, please provide a “letter of accommodation” from Disabilities Services within the first two weeks of the course. All such notifications shall be confidential between the student and instructor.

*An architect’s response is primarily creative and an engineer’s response is essentially inventive.*

-- Peter Rice

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**NAAB Criteria**

The School of Architecture at UNC Charlotte maintains accredited status through the National Architectural Accrediting Board (NAAB), which reviews the curriculum, facility, faculty, and program resources annually, and conducts an intensive site visit every six years. As part of this review, the NAAB will review student work produced in courses throughout the curriculum. This course will include content related to the following NAAB Student Performance Criteria:

**B.4 Technical Documentation**

Ability to make technically clear drawings, prepare outline specifications, and construct models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
B.5 **Structural Systems**
Ability to demonstrate the basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.

B.7 **Building Envelope Systems and Assemblies**
Understanding of the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.

B.8 **Building Materials and Assemblies**
Understanding of the basic principles used in the appropriate selection of interior and exterior construction materials, finishes, products, components, and assemblies based on their inherent performance, including environmental impact and reuse.

**Studio Culture:**

Studio culture is a critical piece to a successful semester. It is important that you respect each other while at the same time participate in offering constructive criticism. Respect the work, your colleagues, the space and the equipment. You will have to rely on your peers to supply the majority of day-to-day critical feedback needed to develop well-rounded work. The culture of the studio is enriched and sustained by your positive contribution. Due to these circumstances there will be a strict set of "rules" we will live by while in studio from 2:00 to 5:30 pm MWF.
1. No cell phone use
2. No email/chatting or surfing the web for anything aside from studio work
3. You need to remain in studio during studio hours and work on studio tasks

Being fully present in studio also means that cell phones are switched off and computer usage is limited to studio work during studio hours. All students are required to abide by the UNC Charlotte policy on Responsible Use of University Computing and Electronic Communication Resources, which can be found online at: [http://www.legal.uncc.edu/policies/ps-66.html](http://www.legal.uncc.edu/policies/ps-66.html). Remember that harassment, as defined in the UNC Charlotte Sexual Harassment Policy, is prohibited, even when carried out through computers or other electronic communications systems, including course-based chat rooms or message boards.

It is imperative and highly recommended that all work outside of studio hours take place in the studio. The feedback that you gain from one another after hours is an essential piece to any successful project, and something that without which it will be impossible to flourish.

Presence: The studio is intended as the primary site for production of work: students who work in studio benefit from the collective presence of their peers, and will out-perform students who attempt to complete work elsewhere. It is not recommend that students use studio time for gathering materials, data, equipment, etc., unless approved by the studio instructor.

But presence in studio means much more than mere physical proximity to your desk during scheduled class time. You are expected to be fully present intellectually and emotionally for the duration of studio as well, and you are urged to make the most of this time each session. The studio is a community: respect one another’s need to work at all hours. Idle conversation and horseplay are distractions, and should not take place within the studio.

Pro-active participation: All students should be actively involved in all discussions, pin-ups, and reviews, as well as meet deadlines, schedules and targeted project completion. You need to take risks and be responsible for your project. The work is yours. Visible progress is expected of students between and during each class session, and forms the basis for availability of individual critique. No work = no feedback. Time management skills are of the utmost importance. Regularly ask yourselves how to best make use of your time in any given instance.

Respectful Interaction: All perspectives and opinions are welcomed and will be respected in this classroom or studio, as long as they are presented in manner that is respectful. Intolerance will not be tolerated. Be mindful of your conduct when engaged in experiences and discourses with those who differ from you in appearance, race, ethnicity, beliefs, gender, sexuality, style, politics or intellectual position. If you feel personally uncomfortable or alienated, or that diversity in general is any way stifled in this class, please let the instructor know so that the situation can be remedied. Also be aware that your studio is a public place so be sensitive to images and other materials around your desk, including on your computer, which might be offensive to
others. In addition, all students are required to abide by the spirit and specifics of the UNC Charlotte Sexual Harassment Policy, which can be found online at: http://www.legal.uncc.edu/policies/ps-61.html.

Contact: Design studio allows for a high degree of so-called ‘contact hours’. Desk critiques, design reviews and written and/or oral evaluations will serve as the primary means for receiving feedback and constructive criticism of course work and student progress. Outside of studio time, faculty maintain a myriad of other commitments, so the best means for facilitating contact with the instructor outside of class is via e-mail, whether it is a question, an announcement, or a request for a meeting. Instructors will endeavor to respond to your emails as quickly as possible, but cannot guarantee immediate responses.

Similarly, whenever it is necessary for your instructor to communicate with you outside of class-time, whether collectively or individually, it will be through MOODLE. These notices might be regarding schedule changes, additional readings, information pertinent to your assignments, etc. As per University policy, the instructor will use your UNCC email address, and students are responsible for regularly checking their UNCC email and Canvas.