

## Graduate Design Studio: Integrated Project

ARCH 7102, Spring 2018, MWF 2:00-5:30 (6 Credit Hours)  
SCHOOL OF ARCHITECTURE - UNIVERSITY OF NORTH CAROLINA CHARLOTTE

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**Premise:** The process of designing a structure to be built — one in which enclosure, environmental systems, structure, and code compliance are considered integrally in a scheme or plan — does not inevitably or automatically result in ‘architecture’. Neither is architecture simply achieved by fashioning a beautiful, provocative, or compellingly programmed design if it does not also integrate the systems or measures by which it is built. Architecture arises through an “Integrative Design” process; as the speculative beginnings of a project evolve, take shape, and gain clarity, they approach greater design depth and reality.

This studio seeks to resolve these complementary architectural realities in the context of designing a single, speculative project, with the aim of producing knowledge and well developed architecture. You are asked to consider how the practice of delivering a building can open up and be the departure point for the production of an architectural design. This necessitates an integrative process and perspective, examining the intersection of project circumstances, your formal / spatial concepts, and systemic material, tectonic, and environmental possibilities of architecture.

**Objectives:** As the comprehensive studio, ARCH 7102 is intended to address an important accreditation requirement, the National Architectural Accrediting Board’s Student Performance Criterion #28, “Comprehensive Design,” which is defined as: “Ability to produce a comprehensive architectural project based on a building program and site that includes development of programmed spaces demonstrating an understanding of structural and environmental systems, building envelope systems, life-safety provisions, wall sections and building assemblies and the principles of sustainability.” (NAAB Conditions for Accreditation, 2004 Edition.)

The expected outcome will be student projects that are strong conceptually, that are well-developed and well-represented, and that demonstrate a synthesis of knowledge of the various components of comprehensive design, as defined in the NAAB criteria. Including:

- Design an architectural / site project in substantial detail from preliminary analysis, through schematic design, and into design development, reaching a level of “Integrative Design” consistent with the NAAB definitions, meeting other NAAB Student Performance Criteria indicated in the syllabus, and in compliance with current standards of the International Building Code;
- Develop a conceptual framework and analytical skills for critically and creatively interpreting and responding to the specific conditions of site/context, and program;
- Design an architectural / site project that exhibits conceptual, formal, aesthetic, technological, environmental, and experiential clarity, criticality and sophistication;
- Design an architectural / site project that embodies critical, expressive, and intentional tectonics and technologies, including materiality, structure, constructional detailing, building systems, and environmental efficacy;
- Design an architectural / site project inspired at the broad and detailed level by the experiential dimension of human rituals, purposes and engagements.

**Methodology:**

ARCH 7102 is a course with demanding objectives. The design process will be iterative, allowing for an Integrative Design process in which successive explorations inform design decision making and refinement. An emphasis on design development throughout the semester should result in continual strengthening of the concept and design direction from the beginning to the end of the project. Technical resolution and an understanding of the interrelationships between systems, components, performance, and design are central; it is expected that these interrelationships and the detailed development of your project will support and enlarge your ideas and intentions. Design is an act of opening up a line of questioning, even when the goal is to converge and specify in order to actualize.

Regularly scheduled Tech(nique) Seminars (TECSEMs) will occur throughout the semester, and will be times to support project development. These Seminars will include:

- Site & Program Analysis
- Accessibility & Circulation
- Building Codes & Life Safety
- Structural Systems / Span / Foundations
- Envelope / Enclosure
- Environmental System
- Wall Sections & Materials
- Building Information Modeling (Revit Instruction sessions / workshops)
- Architectural Drawing Sets & Informative Diagramming

All course work will be studio-based, and will include both digital and analog methods. Analysis of the program, site conditions, and environmental factors will assist in establishing an informed site master plan and building concept. Analog and digital design charrettes will facilitate focused examination of different project circumstances and issues, and will become progressively synthesized into an integrative building design. All formal course instruction, professional and technical supplements, project research and reviews will be collaborative between the sections. Typical weeks will include:

- TECSEM(s)
- Intensive BIM (Revit), Workshops, or Symposia
- Desk Critiques & Pin-ups
- Formal Reviews

Three major reviews will also be scheduled during the semester.

**Content:** The design project site is located in Charlotte uptown. You will work in two-person teams to design a health care project this semester.

Site and program guidelines for the projects as well as a set of contemporary architectural issues that allow students to complete a fully resolved building design, including architectural ideas, site work, technology integration, details, and basic code compliance. Faculty also establish a relatively prescriptive framework for the pacing of the work (i.e. the phases of the project). Students are further expected to be proactive during each defined phase of the semester—to create a hierarchy of themes and objectives and to develop specific graphic processes that complement their design inquiries. At the final review, building projects must meet all of the stated objectives and requirements.

The completed project should serve to demonstrate your ability to work collaboratively in teams to integrate the various components of an “Integrative” Design. Your projects should also represent a synthesis of your “Ability” and/ or “Understanding” related to NAAB Student Performance Criteria indicated below.

**References:**

- Allen, Edward & Joseph Iano. The Architect’s Studio Companion (Latest Ed). New York, John Wiley & Sons
- Ching, Francis. Building Construction Illustrated (Latest Ed.). New York, John Wiley & Sons
- Ching, Francis. Building Code Illustrated (Latest Ed.). New York, John Wiley & Sons

**Recommended:**

- AIA, Architecture Graphic Standards, Wiley
- Allen, Edward, The Fundamentals of Building Construction-Materials and Methods, New York, John Wiley & Sons
- Beall, Christine, Masonry Design and Detailing, McGraw Hill

- Binggeli, C.(2010). Building Systems for Interior Designers. Hoboken; John Wiley
- Compagno, Andrea, Intelligent Glass Facades, Birkhauser
- Daniels, Klaus, The Technology of Ecological Buildings, Birkhauser
- Hausladen, G., Saldanha, M., Liedl, M. and Sager, C. (2005). Climate Design. Munich; Birkhauser
- Klaus Daniels. Advanced Building Systems, Birkhauser
- Kwok, Alison & Walter Grondzik, The Green Studio Handbook. Burlington, MA, Architectural Press
- Schittich, Christian, Building Skins, Birkhauser
- Sutherland, Lydall, Remarkable Structures, Engineering Today's Innovative Buildings, Princeton Architectural Press
- The International Building Code / 2000
- Wiggington, Harris, Intelligent Skins, Princeton Architectural Press
- Concrete Construction Manual, Glass Construction Manual, Steel Construction Manual, Masonry Construction Manual, Roof Construction Manual, Façade Construction Manual, Birkhauser

**Printing:** Students are expected to print their digital work on a regular basis. We understand that printing is not cheap, and alternatives to printing are sometimes possible, but students must understand that printing is a necessary stage of the design process, not something that occurs only for final reviews.

**Studio:** All students are expected to maintain a working studio space. Working at home is not forbidden, but the studio environment is an important aspect of the learning process.

**Research:** For assistance with research, students are encouraged to contact the Arts and Architecture Liaison Librarian to ask questions via email or to make an appointment to talk with her.

**Attendance:** In order to fully benefit from and participate in this course, attendance is required. More than two (2) unexcused absences will lead to an automatic lowering of a student's grade and may constitute grounds for 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:** Late work will not be accepted, and will not receive credit. Failure to present a complete presentation at two reviews is grounds for automatic failure of the course.

**Contact:** Design studio allows for a high degree of so-called 'contact hours'. 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. Similarly, whenever it is necessary for your instructor to communicate with you outside of class-time, whether collectively

or individually, it will be via email Moodle, and/or Canvas. 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 checking their UNCC email, as well as web-based sites for the course, on a DAILY basis.

**Evaluation:**

Critiques, design reviews, and written and/or oral evaluations will serve as the primary means through which students receive feedback and constructive criticism on their work, methods, and progress. Evaluations are based on: 1) demonstrated understanding of the content and procedures covered by this studio, as evident in their process, analysis, and design development activities throughout the semester, and in the final design project; 2) the quality of the development and execution of studio assignments; 3) clear and systematic graphic and verbal communication in both informal crits and formal design reviews; 4) willingness and ability to respond thoughtfully to feedback and criticism; 5) the insight and clarity of oral and written criticism exchanged between peers; and 6) personal growth in understanding and improvement of skills. Detail evaluation criteria for specific projects will be given prior to their due date.

Successful final projects must: 1) qualitatively and technologically meet the objectives and aims articulated in the syllabus and subsequent handouts, 2) represent comprehensive development as defined by the NAAB accreditation requirements, and 3) comply with the requirements of the International Building Code.

- Communication Requirements (Written, Diagrammatic, Graphic etc.) 5%
  - Schematic Submission 10%
  - Wall Section, Enclosure Strategy and Integration 10%
  - Charrette Assignments 10%
  - Project 50%
    - 1- Development / Final Project and Presentation [25%]
      - Conceptual and Design Clarity/Resolution 30%
      - Development / Comprehensiveness 20%
      - Focus Area Development 20%
      - Communication / Representation 30%
    - 2- Design Development Documents [25%]
      - Conceptual and Design Clarity/Resolution 30%
      - Technical Feasibility and Completeness 40%
      - Communication / Representation 30%
  - Tools Integration [digital and Analog] 5%
  - Participation / Progress 10%
- TOTAL 100%

All grades will be calculated on a 0-100 scale as follows: A = 90-100; B = 80-89; C = 70-79 D = 60-69, F = 59 and below.

## GRADING

Grading of courses conform to the following grading scales and values and are determined according to the following criteria:

A = Commendable

B = Satisfactory

C = Marginal

U = Unsatisfactory

**A (Commendable):** Meets or exceeds stated requirements of the course; exhibits significant improvement, development, and/or intellectual growth over the course of the term; exhibits research efforts from which both the instructor and students may learn; all work turned in on time and presented in a professional manner.

**B (Satisfactory):** Meets the stated requirements of the course; exhibits good improvement, development, and/or intellectual growth over the semester; provides a measure for student emulation; and all work is turned in on time and well presented.

**C (Marginal):** Meets most requirements of the course; exhibits limited improvement, development, and/or intellectual growth over the semester; and all work is turned in on time and neatly presented.

**U (Unsatisfactory):** Fails to meet requirements of the course (the work is incomplete to a significant degree); exhibits little or no improvement, development, and/or intellectual growth over the semester; and/or work is of a caliber that is unsatisfactory to Graduate level educational standards.

It is the responsibility of the student to preserve all relevant work produced over the semester, and to document all phases digitally on a CD to be submitted at the end of the semester. In addition to digital documentation, please note that the professors or the department may retain any original student work for archival and accreditation purposes.

## Policies:

All courses in the SoA are governed by the rules and regulations of UNC Charlotte as stated in the University Undergraduate and Graduate Catalogs. For more information about these policies, please refer to the appropriate catalog, w

**Academic Integrity:** 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. No cheating. No plagiarism. It is assumed that you are aware of and will comply with the spirit and specifics of the UNC Charlotte Code of Student Academic Integrity, which is available online at: <http://www.legal.uncc.edu/policies/ps-105.html>.

Disability: If you have a diagnosed disability which influences your ability to learn or have your work assessed in the classroom, all efforts will be made to accommodate your needs. Please provide a copy of your Letter of Accommodation from the UNC Charlotte Office of Disability Services by the end of the second week of classes. Their office is located in 230 Fretwell and more information is available online at: <http://www.ds.uncc.edu/>. All information about your disability and accommodations will remain confidential.

Please see the instructor if you are interested in being an official scribe (note taker) for this course. Your notes will be made available to others in the class with special needs (including students for whom English is a second language and/or students with learning disabilities).

Electronics & Equipment: 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 portable devices, including but not limited to laptops, tablets, telephones, mp3 players, et cetera, are forbidden in group discussions and reviews, except when allowed by an instructor for note-taking or other pedagogical purposes. Students who bring devices that disturb the class will be asked to leave and will be assessed an unexcused absence. Zero tolerance.

**Culture:**

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>. 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.

Because of the collaborative environment of enquiry that is the Design Studio, you may well learn as much from your peers as you do from your professors. The culture is enriched and sustained by your positive contribution. And because student and instructor alike share responsibility for the collective culture of the studio, all participants are expected to enhance its intellectual life by attending to the following:

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 outperform students who attempt to complete work elsewhere. It is not recommended that students use studio time for gathering materials, data, equipment, etc., unless approved by the studio instructor. Presence in studio also 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 the specifics of the UNC Charlotte Sexual Harassment Policy, which can be found online at: <http://www.legal.uncc.edu/policies/ps-61.html>.

## **NAAB ACCREDITATION CONDITIONS**

This course will include content related to the following NAAB Student Performance Criteria:

**B.1 Pre-Design:** Ability to prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability requirements, and an assessment of their implications for the project; and a definition of site selection and design assessment criteria.

**B.2 Site Design:** Ability to respond to site characteristics, including urban context and developmental patterning, historical fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design.

**B.3. Codes and Regulations:** Ability to design sites, facilities, and systems that are responsive to relevant codes and regulations, and include the principles of life-safety and accessibility standards.

**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.6 Environmental Systems:** Ability to demonstrate the principles of environmental systems' design, how design criteria can vary by geographic region, and the tools used for performance assessment. This demonstration must include active and passive heating and cooling, solar geometry, daylighting, natural ventilation, indoor air quality, solar systems, lighting systems, and acoustics.

**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.

**B.9 Building Service Systems:** Understanding of the basic principles and appropriate application and performance of building service systems, including lighting, mechanical, plumbing, electrical, communication, vertical transportation, security, and fire protection systems.

**C.1 Research:** Understanding of the theoretical and applied research methodologies and practices used during the design process.

**C.2 Integrated Evaluations and Decision-Making Design Process:** Ability to demonstrate the skills associated with making integrated decisions across multiple systems and variables in the completion of a design project. This demonstration includes problem identification, setting evaluative criteria, analyzing solutions, and predicting the effectiveness of implementation.

**C.3 Integrative Design:** Ability to make design decisions within a complex architectural project while demonstrating broad integration and consideration of environmental stewardship, technical documentation, accessibility, site conditions, life safety, environmental systems, structural systems, and building envelope systems and assemblies.