ARC551 Comprehensive Architectural Design Studio
On-line version / Spring 2016

School of Architecture | College of Applied Sciences and Arts | Southern Illinois University Carbondale
Online Spring 2016 | 6 Credit Hours

Studio hours
T/Th 6:00 – 9:00pm central time

Office hours
Rolando Gonzalez T/Th 8:00am – 12:00pm central time
Jose Lugo WThSaSu evening hours

"It is essential for the architect to know how to see: to see in such way that the vision is not dominated by rational analysis."
— Luis Barragan

Instructors
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Studio hours
T/Th 6:00 – 9:00 pm central time

Office hours
Rolando Gonzalez T/Th 8:00am to 12:00pm
Jose Lugo WThSaSu evening hours

Catalog description
On-line architectural design studio focuses upon comprehensive design of a large-scale urban building as fulfillment of the total integration of architectural systems and design criteria. This course serves as the culmination of the fulfillment of student performance criteria through the integration of all major building and urban systems while addressing the current human, social, and environmental issues.

Requisites
- prerequisite: enrollment in M.Arch program and ARC550
- co-requisite: concurrent enrollment in ARC541

ARC541 Architectural Systems and Environments is tightly integrated with the graduate studio design course ARC551. Although the two courses are catalogued separately, they function interdependently. ARC551 initiates the design based on that course’s program requirements and design criteria; however, ARC541 supplements the design criteria with relevant instruction and evaluation of site, zoning, life/safety and building code criteria. The student is required to comply with actual professional building criteria to maintain a successful performance in ARC541. As the design studio progresses, structural and environmental systems are explored of which the successful student is required to select, implement, and illustrate the integration of their various building systems into their studio design solution.
Abstract

This studio is referred to as a comprehensive design studio. It will require each of you to provide a much higher level of technical development and documentation than might have been expected from you in previous studios. While an exception among studios, these requirements will be the norm in a professional environment. As such, this studio is a critical component in your preparation for moving on to your career in the profession. ARC541 is organized to complement and support your studio efforts and the two courses are highly coordinated to help you achieve a successful outcome. Both courses share a focus on tectonic culture (the art of the construction of architecture) and building technology and practices. As mentioned, ARC541 will allow you to develop knowledge and skill in this area and ARC551 will allow you to employ this knowledge through the design process.

The studio will require each of you to apply both a breadth and depth of knowledge to the design process. Breadth refers to the range of considerations embraced in your design process and your exploration of history, theory, site analysis, program analysis, regulatory requirements, building technology, and environmental issues/energy analysis as they apply to your project. Depth refers to the maturity, clarity, and sophistication of ideas, thorough development of the project, and efficient, clear, and successful representation and communication of your ideas.

Course objectives

1: Focus your acquired skills and knowledge into the comprehensive design of a complex architectural project. This project will be informed by a comprehensive program and will be carried out through a rigorous process of programming, site analysis and master planning, schematic design and design development, systems and life-safety analysis, building assembly exploration and selection, and appropriate representation/presentation for assessment.

2: Demonstrate the selection of and integration of structural, environmental, life-safety, building envelope, and building service systems in the setting of an architectural project.

3: Respond to both natural and built site and context characteristics in the development of a program and in the design of a project.

4: Demonstrate an understanding of the codes, regulations, and standards applicable to a given site and building design. These standards should include, but are not limited to, occupancy classification, allowable building heights and areas, allowable construction types, separation requirements, occupancy requirements, means of egress, fire protection requirements, and structural system requirements.

5: Conceptualize and configure a thoughtful project, and thoroughly design and detail an integral part of that project. Select/design appropriate combinations of building materials, components, and assemblies to satisfy the requirements of the building program and design intent.

6: Generate technically precise and readily communicable descriptions and documentation of the proposed design for the purpose of review and construction.

7: Demonstrate the principles of sustainable design through energy modeling the successful integration of the issues of program response, context and site analysis, orientation, climate, materials, tectonics, structure, environmental systems, day lighting, and code analysis in a design project of moderate complexity.

Methodology

This course is organized as an interactive design studio, much like many of today's successful professional offices. This course is about raising inquiries and rigorously investigating those questions on a daily basis through systemic thinking (the process of understanding how things influence one another within a whole) and iterative making. This course is not about doing last minute work leading to an un-synthesized project. Collaborative participation is required of all members of the studio through observation, research, analysis, making, and constructive criticism of your peers.

The comprehensive design process will require you to integrate a large amount of information into your project. This technical development and refinement of design should not be “stitched on” at the end of the design phase, but should be thoroughly considered every step along the way as an integral part of the design process itself. Comprehensive thinking requires you to iteratively consider context, space, concept, light, etc. together with structure, systems, and other more technical based components.
of the project. Along the way, you will need to develop your ability to anticipate the issues that will become challenges, address these issues in a timely and rigorous manner, and integrate the solutions into your conceptual ideas and project design.

Desire2Learn (D2L) will be used throughout the semester in several ways. All assignment and other handouts will be available on the site for your use. You will post your research assignments online, assembling a database for you and your classmates to access. Groups will be structured for you to engage with for assignments A1, A2 and A3. You will also be expected to upload any and all relevant information you find about the site and the project for your classmates to use as well.

**Requirements**

1: Every member of the studio will take an active role in ensuring its quality.

2: This studio will be run as a professional studio. You are expected to be in the studio every required scheduled class meeting time, twice a week. You will treat everyone else in the studio with respect and dignity.

3: You should be prepared with all necessary investigations complete and fully prepared to engage in a critical discussion of your work and its contributions to the larger studio investigations. All process work will contribute to your grade for the project. Failure to meet intermediate deadlines or requirements for any project will impact your evaluation on the project. Project deadlines may be scheduled, but others may be unannounced. Be prepared to present your work at any point during the course. Each assignment will require you to adopt a critical position toward the general topics presented and to construct a self-generative method of recording and making that will enable you to develop your insights and ideas into a project that is appropriate to your design intentions.

4: Time management is a well-known problem for architecture students. You will need to keep ahead of deadlines by making regular progress on your project rather than doing last minute work. This issue is, of course, substantially compounded as most if not all of you are working as well during the semester.

5: As in any professional client presentation, your work should be completely pinned up/posted on D2L and ready to be presented no less than 20 minutes prior to the beginning of the review. Any work that is not ready to present at the beginning of the review will be considered late and will not be presented or reviewed and could result in failure of the project. Projects that are not turned in will receive a zero as a grade. Essentially this would result in the loss of a commission in a professional setting. See that this does not occur. Continuing to work on a project after the review has begun or after the turn-in deadline will result in a failing grade on the project.

6: Any act of plagiarism will result in automatic failure of the studio and may result in dismissal from the program per university policy on such offenses. Any reference material used in assignments must be sourced properly.

7: You will be required to keep a daily log of your ideas and designs in a personal sketchbook. This sketchbook will be dedicated solely to your studio project and will document each day’s major design developments through hand drawn sketches and reflective analytical notes (hopefully mixed together in a rich and productive way). Each day’s entry should be dated to demonstrate a clear understanding of your process. This sketchbook will be collected at least once at the end of the semester (perhaps more) as a contribution for whole evaluation.

8: Directed research and readings will be discussed on an individual basis throughout the semester to support and expand the ideas and issues in your work. You are responsible for hunting down and assimilating these sources into your work in a timely way. You are also responsible for self-guided research into the topics and issues your project pushes towards. Everything will not be handed to you. You must be highly self-motivated and seek out what you need to succeed on your own.

9: We will be working on an international site that will inform the studio design challenge. You can observe our site on Google, please do so multiple times through the semester to gain a more thorough understanding of the place in which you will be designing.

10: Studio discussions and reviews are directed towards establishing a critical discourse of major issues and studio investigations. They are meant to help you to develop your own personal design ideology, theoretical framework, design process, language, and tectonics. You are expected to contribute throughout the semester in these discussions and reviews with regards to your own project as well as those of your classmates. All criticism will be reflective and strictly addressed to products and results, not personal.
11: At the end of the semester, besides the boards to be presented at SIU campus, you will be required to turn in two summarizing items. The first is a booklet (studio determined format) that presents the evolution of your project over the course of the semester. It will be a carefully designed artifact, not a haphazard stack of work. The second item is a DVD of your work for the semester. This DVD will include all of your project work, the daily evolution and process, and all final representation materials including fully documented physical models. Please submit the DVDs in clamshell or slimline cases labeled appropriately. All files must be competently organized so we do not have to hunt for something if we need it. Make sure each file is labeled clearly so we know what it is (if you start that process from the beginning of the semester you will not have to rename everything at the end). These DVDs are used for accreditation reviews for the school. Failure to turn in either of these items could result in at least a reduction of one letter grade on your final studio marks.

12: You will meet with your professors twice during the semester to review your progress over the course of the studio and what you need to do to progress as you move forward in the curriculum. At the final review you will bring to Carbondale your presentation boards, your portfolio, your DVD of your semester work, and a one page summary of your strengths and weaknesses and proposed studio grade.

13: Ask questions!!!! If you do not know something, are unsure about something, feel lost, etc., etc. please ask us to clarify.

14: Since, this is an online class and your instructors are teaching other studio’s, you can always expect that they will respond on Tuesday and Thursday evenings –see times above- as well as during their office hours listed above, you should not count on a prompt answer to that last minute question by E-mail or in the discussion thread, plan ahead. If you need a time to speak with your instructors other than those listed above you need to E-mail for an appointment.

**NAAB criteria**

Student Performance Criteria (SPC): The NAAB establishes SPC to help accredited degree programs prepare students for the profession while encouraging education practices suited to the individual degree program. The SPC are organized into realms to more easily understand the relationships between each criterion.

**Realm A: Critical Thinking and Representation.**

Graduates from NAAB-accredited programs must be able to build abstract relationships and understand the impact of ideas based on the study and analysis of multiple theoretical, social, political, economic, cultural, and environmental contexts. Graduates must also be able to use a diverse range of skills to think about and convey architectural ideas, including writing, investigating, speaking, drawing, and modeling.

Student learning aspirations for this realm include

- Being broadly educated.
- Valuing lifelong inquisitiveness.
- Communicating graphically in a range of media.
- Assessing evidence.
- Comprehending people, place, and context.
- Recognizing the disparate needs of client, community, and society.

The accredited degree program must demonstrate that each graduate possesses the following:

**A.1 Professional Communication Skills:** Ability to write and speak effectively and use representational media appropriate for both within the profession and with the general public.

**A.2 Design Thinking Skills:** Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.

**A.3 Investigative Skills:** Ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.

**A.4 Architectural Design Skills:** Ability to effectively use basic formal, organizational and environmental principles and the capacity of each to inform two- and three-dimensional design.

**A.5 Ordering Systems:** Ability to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
A.6 Use of Precedents: Ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.

A.7 History and Global Culture: Understanding of the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, ecological, and technological factors.

A.8 Cultural Diversity and Social Equity: Understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the responsibility of the architect to ensure equity of access to sites, buildings, and structures.


Graduates from NAAB-accredited programs must be able to comprehend the technical aspects of design, systems, and materials and be able to apply that comprehension to architectural solutions. In addition, the impact of such decisions on the environment must be well considered.

Student learning aspirations for this realm include

- Creating building designs with well-integrated systems.
- Comprehending constructability.
- Integrating the principles of environmental stewardship.
- Conveying technical information accurately

The accredited degree program must demonstrate that each graduate possesses skills in the following areas:

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 EnvironmentalSystems: 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 BuildingEnvelope 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 BuildingService 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.

B.10 Financial Considerations: Understanding of the fundamentals of building costs, which must include project financing methods and feasibility, construction cost estimating, construction scheduling, operational costs, and life-cycle costs.

Realm C: Integrated Architectural Solutions.

Graduates from NAAB-accredited programs must be able to demonstrate that they have the ability to synthesize a wide range of
variables into an integrated design solution.

Student learning aspirations for this realm include

- Comprehending the importance of research pursuits to inform the design process.
- Evaluating options and reconciling the implications of design decisions across systems and scales.
- Synthesizing variables from diverse and complex systems into an integrated architectural solution.
- Responding to environmental stewardship goals across multiple systems for an integrated solution.

The accredited degree program must demonstrate that each graduate possesses skills in the following areas:

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.

Realm D: Professional Practice.

Graduates from NAAB-accredited programs must understand business principles for the practice of architecture, including management, advocacy, and the need to act legally, ethically, and critically for the good of the client, society, and the public.

Student learning aspirations for this realm include

- Comprehending the business of architecture and construction.
- Discerning the valuable roles and key players in related disciplines.
- Understanding a professional code of ethics, as well as legal and professional responsibilities.

The accredited degree program must demonstrate that each graduate possesses skills in the following areas:

D.1 Stakeholder Roles in Architecture: Understanding of the relationships among key stakeholders in the design process—client, contractor, architect, user groups, local community—and the architect’s role to reconcile stakeholder needs.

D.2 Project Management: Understanding of the methods for selecting consultants and assembling teams; identifying work plans, project schedules, and time requirements; and recommending project delivery methods.

D.3 Business Practices: Understanding of the basic principles of a firm’s business practices, including financial management and business planning, marketing, organization, and entrepreneurship.

D.4 Legal Responsibilities: Understanding of the architect’s responsibility to the public and the client as determined by regulations and legal considerations involving the practice of architecture and professional service contracts.

D.5 Professional Conduct: Understanding of the ethical issues involved in the exercise of professional judgment in architectural design and practice and understanding the role of the NCARB Rules of Conduct and the AIA Code of Ethics in defining professional conduct.

**Studio breakdown**

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Please take note that final presentations (which make up only a portion of the design problems) are not the only graded item of the semester. Your attendance, participation, process, and summary work will play a major role in your studio score. Please ask if you have questions regarding grading over the course of the semester. We will try to get grades back to you promptly. Do not ask when you will get a grade for a specific assignment. You will get them as soon as we finish evaluating them appropriately. If you believe you deserve a higher score on an assignment than you received, please submit in writing to us a detailed description of your reasoning and we will take it into account. In this text, you may not refer to any of your classmates work or their grades. Doing so will immediately result in dismissal of the request. No extra credit will be available in this class and no late work will be accepted without appropriate reasoning.

**Topical outline for projects**

- program analysis
  - case studies, program research and analysis
  - site analysis
    - site and context research, field trip, contextual diagramming
- conceptual design and development (individual and group)
  - thesis and parti establishment and evolution, communication
- schematic design (individual and group)
  - concept realization, design process, communication
- design development (individual and group)
  - development process, communication

**Grading**

Within this studio, your work will be carefully examined, discussed, evaluated and graded. You should not confuse feedback or evaluation with grading. Feedback is a process of discussion in which factors that produce a result are themselves modified, corrected, and strengthened by that result. Evaluation is critique of a performance to appraise and mentor a future trajectory of intellectual growth (rational, logical, emotional, intuitive, spiritual) and professional education (ethics, disciplinary knowledge and skills, great practices, etc.).

Grading on the other hand is an index of a relative standing against a standard or norm for a particular peer group’s work. Factors influencing the grade include (among others listed elsewhere in this document), but are not limited to:

- the degree to which your work demonstrates an understanding of and an engagement with the objectives of the studio, and the degree to which it exceeds the minimum requirements,
- a willingness and ability to initiate self-directed research in support of your work,
- an ability and willingness to contribute, through your individual efforts, knowledge and understanding in the subject areas, timely completion of assignments, successful communication of your intentions to others (quality + thoroughness of presentation(s)).
- attendance,
- an ability to contribute to the overall course experience (teach, learn from, inspire, thoughtfully provoke your colleagues and your instructor).

Please note that hard work, although critical to success, does not guarantee any sort of success. The same goes for being in class every day and turning everything in on time. The number of all-nighters you pull has no bearing on your grade. Below you will find the grading criteria that will be used in this course:

**"A" Exceeds Expectations**

Not only fulfills the objectives of the studio syllabi and project statements, but extends them through new discoveries, and insights, beyond their stated scope. These students demonstrate a high degree of professional dedication, rigor, passion and skill for research and exploration, open-mindedness and resourcefulness. They have developed an ability to build upon feedback from a variety of sources, and to excel with an emerging independent “voice”. Their work is rigorously thought through, well crafted, and clearly communicates the breadth and depth of their investigations. An “A” project is one that is superior in a number of dimensions.
“B” Fulfills Expectations

Meets the stated objectives of the studio syllabi and project statements, while also elaborating on the stated issues through independent investigations that lead to developments in the work. These students demonstrate a medium degree of professional dedication, inquisitiveness, systematic rigor and resourcefulness. They are developing an ability to build upon feedback from a variety of sources and are beginning to develop an independent “voice”. Their work is competently thought through, well crafted, and clearly communicates the breadth and depth of their investigations. A “B” project is one that distinguishes it from the average.

“C” Under-Achieves Expectations

Minimally meets the basic requirements of the studio syllabi and project statements, without meeting the larger qualitative objectives. These students demonstrate a low degree of professional dedication and require constant guidance. While demonstrating an understanding of the problem, basic design and communication skills are minimally met. Time management and the breadth and depth of the student’s investigations are lacking. There is little or no evidence of an emerging “voice”, and the ability to develop an independent direction to the work. Although reasonably well crafted the work does not communicate inquisitiveness, systematic rigor and resourcefulness. A “C” project is one that is average and acceptable.

“D” Does Not Meet Most Expectations

Deficient work does not meet many of the basic requirements and objectives of the studio. The work is often fragmentary, lacking synthesis, incomplete, and thought of as simply fulfilling an assignment due on a particular day rather than an opportunity to develop as a designer. These students generally suffer from the following deficiencies: lack of professional dedication, a closed-minded attitude, lack of time management skills, lack of basic professional design and communication skills. As in any professional office, deficient work is not acceptable and will result in the student having to retake the studio.

“F” Fails all expectations

**Plagiarism and student conduct codes**

Any act of plagiarism will result in automatic failure of the class and may result in dismissal from the program per university policy on such offenses. Any reference material used in assignments must be sourced properly. It is each student’s responsibility to know and comply with the SIUC Student Conduct Code and the policies in the Architecture Student Handbook.
SAFETY AWARENESS FACTS AND EDUCATION
Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: http://safe.siu.edu

SALUKI CARES
The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For Information on Saluki Cares: (618) 453-5714, or siucares@siu.edu, http://salukicares.siu.edu/index.html

EMERGENCY PROCEDURES
Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. We ask that you become familiar with the SIU Emergency Response Plan and Building Emergency Response Team (BERT) programs. Please reference the Building Emergency Response Protocols for Syllabus attachments on the following pages. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.

INCLUSIVE EXCELLENCE
SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education as well as an essential preparation for any career. For more information please visit: http://www.inclusiveexcellence.siu.edu/

LEARNING AND SUPPORT SERVICES
Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website:
Tutoring: http://tutorial.siu.edu/
Math Labs http://tutorial.siu.edu/math_tutoring/index.html

WRITING CENTER
The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit http://write.siu.edu/

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY
Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and investigating of discrimination cases. For more information visit: http://diversity.siu.edu/

Additional Resources Available:
SALUKINET: https://salukinet.siu.edu/cp/home/displaylogin
ADVISMENT: http://advisement.siu.edu/
SIU ONLINE: http://online.siu.edu/