COURSE DESCRIPTION:
This comprehensive design studio focuses the knowledge and skills developed in all previous courses on a single project. The course emphasizes the design integration of the building’s structural, HVAC, lighting and environmental systems. Not for graduate credit. Prerequisites: ARC 342, 362, 451, 481, 482 or concurrent enrollment, and major in architectural studies or consent of school director.

This is a project development course taught in the spring semester that emphasizes the integration of the basic elements of building, structural, lighting and power, systems and environmental technologies for a two or more story building. The first half of the semester includes program development, site analysis, concept and schematic design. Concept and schematic design will include lighting design, HVAC, environmental systems, building materials, assemblies and envelope systems. The second half of the semester includes continued design development and documentation of the same project. Studio:12 hours per week and of course additional outside class work.

Overall Goals:
- Broaden and apply the experiences and knowledge gained in previous architectural design and technology classes.
- Simulate the typical office experience of first programming and designing a building, sketching and conceptualizing a project, comparing analysis of multiple issues and thought process, then preparing the design development and pre-construction documents phases of the building project.
- Impart the importance of the development of a design in an architectural project.
- Further develop the skills in the disciplines of schematic design, conceptualization, knowledge management, design development and representation of the design intent.

COURSE OBJECTIVES:
Upon completion of this course, the student will be able to:

1. Focus the acquired skills and knowledge into the comprehensive design of an architectural project.
2. Demonstrate the integration of structural, lighting and power, environmental and HVAC building systems in the setting of an architectural project.
3. Emphasize abilities on the design development, drawing documentation, and model presentation of the project.
4. Understand and respond to natural and built site characteristics in the development of a program and design of a project.
5. Access, select, and integrate structural systems, HVAC, environmental systems, lighting and power, life-safety systems, building envelope systems, and building service systems into building design.
6. Demonstrate an understanding of the codes, regulations, and standards applicable to a given site and building design, including occupancy classifications, allowable building heights and areas, allowable construction types, separation requirements, occupancy requirements, means of egress, fire protection, and structure.
7. Assess, select, configure, and detail an integral part of the design and select appropriate combinations of building materials, components, and assemblies to satisfy the requirements of building program.
8. Make technically precise descriptions and documentation of a proposed design for the purpose of review and construction.
9. Produce an architectural project informed by a comprehensive program, from schematic design through the detail development of programmatic spaces, structural, lighting, HVAC and environmental systems, life-safety provisions, wall sections, and building assemblies, as may be appropriate; and to assess the completed project with respect to the program’s design criteria.
10. Demonstrate the principles of sustainable design through the successful integration of the issues of program response, context, site analysis, orientation, climate, materials, tectonics, structure, environmental systems, day lighting, and codes into a design project of moderate complexity.

Methodology: This is a combination lecture and studio course working with a real project. The lectures may be given at any time during the studio period for the presentation of information, concepts, ideas, questions, etc. for studio assignments and demonstration of techniques. Students will be expected to complete reading assignments in required textbooks and supplemental readings as assigned, research as required for each topic, and take notes in discussion sessions. Each student is expected to participate actively in each session by asking and answering questions, exploring solutions by discussing notes, concepts and ideas in an informal manner. Advance preparation on each topic is required. Please have all materials and supplies at your desk for critiques, demonstrations, review, and work. Do not expect to leave to studio to go home to work on your computer, this is not an isolated profession, it is a team-orientated profession. Do not expect critiques on small 8½” x 11” fit to sheet, on digital screen, or on non-scaled drawings. It is important that all work is printed to an appropriate and readily discernable scale in order to discuss.

As far as teamwork is concerned, learn to express your thoughts while accepting the ideas of others and building the collection of ideas into an overall collective work. Teams of professionals produce the built environment. Therefore, a portion of the work produced in this course will be carried out in a team environment. The model promoted is often referred to as a ‘participant-observer’ mode and part of interactive learning processes. The embracing and integration of multiplicities and divergent points of view into singular frameworks is critical to modern society. Here, every person works together for the greater goal. To further encourage public accountability; co-grading will occur between individuals and teams.

Owning the Problem (or ‘Accountability’) - If this course is to be valuable to you it must be meaningful. For it to be meaningful you must find it relevant to the fulfillment of your personal goals. You must find it useful in some way. How you find it and making it useful and thus meaningful is up to you. You will be presented content that has been found to be useful to many people in architectural
studies for many years. You must find how to make it yours. I challenge each of you to further develop your experience (increase your ownership) in those areas in which you have some familiarity and to embrace those areas in which you have none (read/research). It is important that each person learns how to manage the many multifaceted and relational aspects of architecture and to hold accountability for their work in relation to others. This class has the added potential aspect that the class can and will be restructured (only for the better), if the need or proposal arises in a democratic fashion. Of course though, the instructor has the final say and approval for such changes to the scope of work.

Studio Expectations: Attendance and participation is expected in the design studio as it is the core of your professional education and as such your participation is an indication of your desire to be an architect. In order for the studio and your own experience be fully developed, each individual needs to be available and working in the studio during schedule hours and at other times as well. Always be prepared to work during the studio. Bring ALL work To ALL classes. Be prepared to present your work formally or informally during any class session. Work left ‘at home’ is treated as work not able to be shown, and thus discounted. Each section will work independently with their respective faculty, however there will be times when all sections will meet together, work together on a specific task as teams, and/or present together. Please arrive on time, as often the studio will start with general comments, instructions, and discussions that affect the whole studio. If you arrive late you will miss these discussions and inconvenience the others. It is required that you stay till the end of the studio period; again there are often comments, summaries, made at the end of the studio that affects everyone. Please do not ask to leave early after you have had a critique. Equipment and materials are required in the studio at all times. Students who are not in studio do not benefit from the information and demonstrations presented. It is your responsibility to obtain any missed information from other students. All assignments and projects must be turned in at the specified time and place. Late projects with an excused absence, as defined by the university’s guidelines and with prior notification to the instructor of your absence may be accepted. Late projects with an unexcused absence will be penalized by a letter-grade for each class day the project is late. The professor should be notified by telephone or e-mail of any absence. The student must present verification of excused absence at the next scheduled class attended. The Department policy indicates that if you miss three classes, your course grade will then be reduced by one letter grade per absence. Students who do not officially withdraw from the course before the drop deadline will receive a grade based upon their semester average, which will include a zero for projects assigned and not turned in and graded. Continual non-attendance of a course does not automatically drop you from the class list. There is a direct relationship between attendance, participation, and level of grades…. 

This studio is your shared home and responsibility for the semester. It is a dedicated space for your use and benefit. As we all share the studio please keep it reasonably clean and be very careful with food and drinks. There is no smoking allowed in the studio, this applies to evenings and weekends. The use of spray adhesive or spray paint is not allowed in the studio or the building. Just go outside to use these materials and put down a protective mat/screen to protect the environment. No destruction of building assemblies (windows, ceiling tiles/grids, doors, walls, floors, blinds, etc.). Please take care of the furniture. Use a cutting mat to protect and preserve the desktops. All of the above is classified as destruction of university property and therefore subject to university student conduct statutes. A key to the studio will be supplied at the beginning of the semester which must be returned to the school or final grade may be withheld. Lock the doors if you are the last one to leave. Learn to work in the studio and exchange ideas with your peers.

Use of LAPTOP/COMPUTERS during class should be restricted to class use (e.g. not for games, movies/TV, shopping, chatting, ….etc..) Cell phones should be turned off during lecture sessions as a
courtesy to the teacher and to fellow students. Engaging outside work during class is counter-
productive and indicates a conflict of interests and poor time management. Please keep all work in
class to the assignment-at-hand.

Readings: Special reading and/or research assignments will be made per assigned goals from a
reading list, suggested Web Sites, and relevant Code related references, and/or placed on reserve in the
Arch/I.D. Library or Morris Library.

Supplies/Equipment: To be specified by the faculty.

Sketchbook – Journal: Each student should have their own complete journal sketchbook with a
continuous record of research, reading notes, thoughts, sketches, graphic representations of ideas, etc.
available for review with the faculty at all times. We recommend a bound (plain or grid type)
sketchbook to keep project notes, addresses, business cards, phone numbers, field notes, diary entries,
sketches and maps, etc. for the entire project. Entries can be scanned for inclusion with digital
presentations. Record our individual in-class meetings, lecture notes, city meetings, fieldwork, and
references to other research. This sketchbook-journal will be reviewed at your desk crits prior to mid-
term and again at the end of the term.

Student Conduct: Please review the SIUC Student Conduct Code - SIU UNDERGRADUATE
CALALOG regarding University policy regarding Acts of Academic Dishonesty. Unless required as
part of a team effort, students are to do their own work. Do not trace or copy, including electronic
copies, of another student's research or work unless specifically cleared with your instructor. If there
is ANY QUESTION, do not hesitate to ask, as this is a very serious offense, subject to the above
referenced Student Conduct Code. In addition, undermining the class processes or other students
(work or otherwise) is unethical to the greater good and is equally considered to be cheating fellow
students. Please keep all actions transparent and open to all involved. If we engage field work and
community settings, remember that we not only are representing Southern Illinois University, we are
representing the School of Architecture and our profession that “serves the public” and “serves in the
best interest of the public”. Please be respectful of others around you and act accordingly.

Please refer to the SIUC SOA Studio Culture Policy for a description the fundamental properties and
expectations of the studio setting.

Special Concerns: IF ANY REASON exists which may prevent you from giving your full and
undivided attention to the successful completion of this class you MUST advise your faculty
immediately. If there is any problem or concern that you have which might impact your performance
in the class, please inform the instructor the first week of class. To be registered for this class, you
must satisfy the prerequisites for the class. If this is not the case or you are uncertain, you must see the
instructor, advisor, or Chair immediately.

NOTE 1: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that
provides comprehensive civil rights protection for persons with disabilities. Among other things, this
legislation requires that all students with disabilities be guaranteed a learning environment that
provides for reasonable accommodation of their disabilities. If you believe you have a disability
requiring an accommodation, please let me know at your earliest convenience so that SIUC Disability
Support Services (DSS) can help with the appropriate academic accommodations. DSS (618-453-
5738; or http://disabilityservices.siu.edu) typically recommends accommodations through an
Accommodations Agreement From. Any information you provide is private and confidential and will
be treated respectfully as such.
NOTE 2: This class will be conducted in a professional manner and will be considered a ‘zero tolerance’ atmosphere. Any discrimination will not be tolerated.

Evaluation: Final grades are based on an evaluation of student performance of assigned projects. Each project is assigned a percentage of the final grade (100%) based upon the scope and duration. Each project is assigned a grade. The final grade is derived by multiplying each project grade by its’ percentage, the total of these numbers is the semester grade, less any deductions for excess absences. Each project has a series of sub-grades based on each level of work progression and specific tasks needed to fulfill the project. Since the projects are group or team oriented, there will be co-grading amongst team members to promote interaction and participation in one’s own value in a social setting, emulating urban design as it is especially a reflexive, social practice, not a pure art of its own. In addition, the professor will grade accordingly in the ‘traditional’ manner as the final authority to the success of the project and/or progress of the student. The final grade outcome is still the burden of the professor. While there will be scheduled discussions and written reports of each students’ progress, it is ultimately up to the student to consult with the professor on an on-going basis if there is any question of the status of the student.

Grading Policy: Projects are due on the hour and date specified for submittal or presentation. Late projects will be considered for evaluation only with prior approval by the instructor.

Grading Scale (Interpolated from NAAB SPC grading criteria below):

A  Above the expected. Only the very top process and product. 90% + -- Clear and working understanding of all course concepts as demonstrated through discussion, critique and work. Do you know what integration issues are relevant and did you use them? Meeting ALL the individual, team, and class work requirements and completing them at the top level of the class.

B  Best and more than required. Clearly well above the average work. 80% - 89% -- Shows clear understanding of integration concepts as demonstrated through discussion, critique work. Meeting ALL the individual, team, and work requirements and completing them near the top level of the class.

C  Center of the pack / average. Meets minimum acceptable standards 70% - 79% -- minimal understanding of course concepts as demonstrated through discussion, critique and work. Meeting ALL the individual, team, and class work requirements. And completing them at a level that meets minimum standards. Shows understanding of course concepts as demonstrated.

D  Deficient. Below standards of the department and course. 60% - 69% -- lack of understanding of course concepts as demonstrated through discussion, critique and work. Not meeting ALL the individual, team, and class work requirements OR completing them at a level below minimum standards. Unable to exhibit skills needed to be a potential professional. Lacks sufficient course concept understanding as demonstrated.

F.  Failing. Complete lack of understanding of concepts and required class work.
Less than **60%**

**INC  Incomplete** - Will be used only in exceptional circumstances beyond the control of the student. The student must be passing the course at the time.

**Indicators of Student Performance Related to Objectives**

Assessment will be based on the senior design project completed in ARC 452; Architectural Design and Construction Documentation. The students culminate their educational process with a comprehensive design, documentation, and presentation of the project.
The accredited degree program must demonstrate that each graduate possesses the knowledge and skills defined by the criteria set out below. The knowledge and skills are the minimum for meeting the demands of an internship leading to registration for practice. The school must provide evidence that its graduates have satisfied each criterion through required coursework. If credits are granted for courses taken at other institutions or online, evidence must be provided that the courses are comparable to those offered in the accredited degree program.

The criteria encompass two levels of accomplishment:

• Understanding - The capacity to classify, compare, summarize, explain and/or interpret information.
• Ability - Proficiency in using specific information to accomplish a task, correctly selecting the appropriate information, and accurately applying it to the solution of a specific problem, while also distinguishing the effects of its implementation.

The NAAB establishes performance criteria to help accredited degree programs prepare students for the profession while encouraging educational practices suited to the individual degree program. In addition to assessing whether student performance meets the professional criteria, the visiting team will assess performance in relation to the school's stated curricular goals and content. While the NAAB stipulates the student performance criteria that must be met, it specifies neither the educational format nor the form of student work that may serve as evidence of having met these criteria. Programs are encouraged to develop unique learning and teaching strategies, methods, and materials to satisfy these criteria. The NAAB encourages innovative methods for satisfying the criteria, provided the school has a formal evaluation process for assessing student achievement of these criteria and documenting the results.

For the purpose of accreditation, graduating students must demonstrate understanding or ability as defined below in the Student Performance Criteria (SPC) assigned to this course:

ARC 452 - Student Performance Criteria: This class meets 2009 NAAB requirements for Architectural Education Accreditation where students must demonstrate awareness, understanding, or ability in the following areas:

**Realm A: Critical Thinking and Representation:** Architects must have the ability to build abstract relationships and understand the impact of ideas based on research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts. This ability includes facility with the wider range of media used to think about architecture including writing, investigative skills, speaking, drawing and model making. Students’ learning aspirations include:

- **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.4. Technical Documentation:** Ability to make technically clear drawings, write outline specifications, and prepare models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
- **A.5. Investigative Skills:** Ability to gather, assess, record, apply, and comparatively evaluate relevant information within architectural coursework and design processes.
- **A.7. Use of Precedents:** Ability to examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principals into architecture and urban design projects.
- **A.9. Historical Traditions and Global Culture:** Understanding of parallel and divergent canons and traditions of architecture, landscape and urban design including examples of indigenous, vernacular, local, regional, national settings from the Eastern, Western, Northern, and Southern hemispheres in terms of their climatic, ecological, technological, socioeconomic, public health, and cultural factors.
**Realm B: Integrated Building Practices, Technical Skills and Knowledge:** Architects are called upon to comprehend the technical aspects of design, systems and materials, and be able to apply that comprehension to their services. Additionally they must appreciate their role in the implementation of design decisions, and the impact of such decisions on the environment. Students learning aspirations include:

- **B. 1. Pre-Design:** *Ability* to prepare a comprehensive program for an architectural project, such as preparing an assessment of client and user needs, an inventory of space and equipment requirements, an analysis of site conditions (including existing buildings), a review of the relevant laws and standards and assessment of their implications for the project, and a definition of site selection and design assessment criteria.

- **B. 2. Accessibility:** *Ability* to design sites, facilities, and systems to provide independent and integrated use by individuals with physical (including mobility), sensory, and cognitive disabilities.

- **B. 3. Sustainability:** *Ability* to design projects that optimize, conserve, or reuse natural and built resources, provide healthful environments for occupants/users, and reduce the environmental impacts of building construction and operations on future generations through means such as carbon-neutral design, bioclimatic design, and energy efficiency.

- **B. 4. Site Design:** *Ability* to respond to site characteristics such as soil, topography, vegetation, and watershed in the development of a project design.

- **B. 5. Life Safety:** *Ability* to apply the basic principles of life-safety systems with an emphasis on egress.

- **B. 6. Comprehensive Design:** *Ability* to produce a comprehensive architectural project that demonstrates each student’s capacity to make design decisions across scales while integrating the following SPC:

- **B. 8 Environmental Systems:** *Understanding* the principles of environmental systems’ design such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, and acoustics; including the use of appropriate performance assessment tools.

- **B. 9. Structural Systems:** *Understanding* of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems. (In conjunction with Structures III)

- **B. 10. Building Envelope Systems:** *Understanding* of the basic principles involved in the appropriate application of building envelope systems and associated assemblies relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.

- **B. 11. Building Service Systems:** *Understanding* of the basic principles and appropriate application and performance of building service systems such as plumbing, electrical, vertical transportation, security, and fire protection systems.

- **B. 12. Building Materials and Assemblies:** *Understanding* of the basic principles utilized in the appropriate selection of construction materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse.

**Realm C: Leadership and Practice:** Architects need to manage, advocate, and act legally, ethically and critically for the good of the client, society and the public. This includes collaboration, business, and leadership skills. Student learning aspirations include:

- **C. 3 Client Role in Architecture:** Understanding of the responsibility of the architect to elicit, understand, and reconcile the needs of the client, owner, user groups, and the public and community domains.

- **C. 7. Legal Responsibilities:** *Understanding* of the architect’s responsibility to the public and the client as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, and historic preservation and accessibility laws.
Quigley Hall Emergency Response Procedures - Fall 2009

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings in Quigley Hall and elsewhere on campus, available on the BERT’s website at www.bert.siu.edu, Department of Public Safety’s website www.dps.siu.edu (disaster drop down) and in the Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.

If an evacuation of Quigley Hall is required during an emergency, ALL School of Architecture students, faculty, and staff (from all three programs) are to gather ASAP after exiting in the grassed area east of the Quigley Courtyard and covered walkway area to determine if there are people unaccounted for at that particular time. There are four SoA faculty members that are part of the SIUC Quigley Hall BERT Team (Michael Brazley, Scott Frisch, Dave White, and Nadine Wojnarowski) who will be facilitating the necessary emergency procedures. There are BERT Posters located in numerous public areas throughout Quigley with Quigley Team emergency phone numbers.

Do not hesitate to call 911 if you have any sense of emergency and there isn’t a faculty or staff person available to immediately assist – There are highly qualified and prepared professionals to make a response decision and to give you advice over the phone.

QUIGLEY HALL EMERGENCY RESPONSE MEETING AREAS

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>AREA</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and Nutrition</td>
<td>1</td>
<td>Woody Hall grassed area West of Quigley Main Entry</td>
</tr>
<tr>
<td>Child Development Laboratory</td>
<td>2</td>
<td>North Side Quigley beyond Fenced Area</td>
</tr>
<tr>
<td>Social Work</td>
<td>3</td>
<td>Grassed Area NE of Loading Dock and Auditorium</td>
</tr>
<tr>
<td>School of Architecture</td>
<td>4</td>
<td>Grassed Area East of Quigley Patio and the Covered Walkway</td>
</tr>
<tr>
<td>College of Education - Pre-School</td>
<td>5</td>
<td>Grassed Walkways Area beyond South Entry</td>
</tr>
<tr>
<td>General Classrooms &amp; Auditorium</td>
<td>1, 3, &amp; 4</td>
<td>Please instruct those outside faculty, students, and visitors during an emergency</td>
</tr>
</tbody>
</table>
**Schedule Overview:** See special handouts for the project and schedule. Each student will be working individually and shall be completely responsible for his or her own work. There will be team assignments periodically to achieve specific tasks needed by all students.

**TOPICAL OUTLINE**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Percentages of Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Program Development</td>
<td>5%</td>
</tr>
<tr>
<td>A. Research</td>
<td></td>
</tr>
<tr>
<td>B. Analysis</td>
<td></td>
</tr>
<tr>
<td>II. Site Analysis</td>
<td>5%</td>
</tr>
<tr>
<td>A. Data collection</td>
<td></td>
</tr>
<tr>
<td>B. Analysis</td>
<td></td>
</tr>
<tr>
<td>III. Concept Development</td>
<td>15%</td>
</tr>
<tr>
<td>A. Formulation of concept</td>
<td></td>
</tr>
<tr>
<td>B. Communication of concept</td>
<td></td>
</tr>
<tr>
<td>IV. Schematic Design</td>
<td>25%</td>
</tr>
<tr>
<td>A. Design realization</td>
<td></td>
</tr>
<tr>
<td>B. Design process</td>
<td></td>
</tr>
<tr>
<td>C. Communication of design</td>
<td></td>
</tr>
<tr>
<td>V. Design Development</td>
<td>25%</td>
</tr>
<tr>
<td>A. Development process</td>
<td></td>
</tr>
<tr>
<td>B. Communication process</td>
<td></td>
</tr>
</tbody>
</table>
Task Outline  ARC 452  Expected Project Goals

PRE-DESIGN

- Master Plan Review including the following:
  • Land Use including built-form, open space, landscape and facility use
  • Circulation including pedestrian, ADA, bicycle, automobile, light service, heavy service, deliveries, fire department, security, public bus, private bus, rail, staff, student, and visitor parking
  • Research specific project plans
  • Develop Master Plan Update
  • Revise and update the study model for each area of the master plan.

- Establish and Analyze Building Programs
  • Discuss Owner and User requirements.
  • Establish building program with owner
  • Prepare relationship and flow diagrams
  • Research the specific building types
  • Visit similar faculties
  • Complete a site and context analysis and select building site
  • Complete site analysis to include climate, geology, hydrology, contours, soils, vegetation, and site survey.
  • Complete the context analysis including the selected site’s existing and past uses, relationship to the project and the community.

CONCEPT DESIGN

- Develop Concept Design Drawings and massing models
- Develop site and landscape concept
- Develop building concept
- Develop structural concept
- Develop passive heating & cooling systems, lighting, and mechanical & electrical systems
- Develop a preliminary furniture layout
- Design Review

SCHEMATIC DESIGN

- Schematic Design drawings and models
- Complete Schematic Design
- Complete Schematic Design presentation
- Prepare outline specifications checklist
Schematic Presentation

DESIGN DEVELOPMENT AND DOCUMENTATION

- Prepare Working Design Development Drawings and Models as indicative of pre-construction, cost estimation, and pre-contract document phases of real-world project scenarios.

- Complete architectural models suitable for presenting the project at both the overall building scale and at a larger scale to represent more detailed and sectional accounts of key elements or components of the design to be determined by project needs.

- Prepare a project cover sheet, determine extent of working drawings, and prepare selective technical specifications of the design project.

- Prepare sample boards, cut-sheets, perspective studies, and/or design sketches distinctly showing incorporated products and materials in context.

- Prepare two copies of an 11” x 17” Project Report including selective and supportive photographs, renderings, samples, cut-sheets, and detailed drawings, etc. to fully convey the intent, development, and implementation of the design. The instructor will retain one copy. The Project Report will accompany design presentation boards and detail models of each design.

- Presentation boards and models of final project (number/size to be determined per project).

- Prepare Intern Development Program (IDP) application.
passage, transfer, waiting, actuate, circle, fly about, get about, get around, go about, gyrate, mill around, mobilize, move around, radiate, revolve, rotate, set off, travel, wander, driving, excursion, flying, movement, navigation, ride, sailing, sightseeing, tour, transit, trek, trip, biking, commutation, cruising, hop, junket, passage, ramble, touring, voyage, weekend, globe-trotting, communication, overnight, expedition, inquiry, reconnaissance, search, study, tour ...

multi-modal transportation center with podcars
Course Objectives:
Upon completion of this course, the student will:
1. Research and present studies, writings and analysis of: the building type, site, program, codes, systems, history, IDP and context.
2. Complete site model by end of the third week of the semester to use to study your architectural ideas.
3. Explore architectural concepts that balance all the issues related to environmental factors that will create a building as close to net-zero energy as possible. Use IESVE to document how your building is energy efficient from early design!
4. Create multiple architectural concepts that explore the relationships of your research, program and ideas to a design solution through plan, section, elevation and details; documented by your research, drawings- free hand and computer, writings, models, movies and any other means to express your architectural ideas.
5. Incorporate structure, systems, lighting, interiors, materials and components into your design concepts.
6. Decide on a schematic design that balances all of the key elements of design and sustainability.
7. Mid-review will require a full schematic design with site study and building models, plans, sections (wall and building), elevations, models and details with sketchbook ready to move into the DD phase.
8. Develop your schematic design exploring and detailing your architectural solution into a DD set.
9. Final-review will include physical site models, physical individual models, IESVE simulation studies and hand and computer generated architectural information on boards; as well any other expression as appropriate.
10. Meet architectural standards for design such as accessibility, life safety, LEED, IESVE Energy Modeling and present all research, analysis and studies from the studio in an 11 x 17 document, with sketchbook as complete documentation for class. Include photo’s of models. CD also submitted with all work from the semester.
11. Create a basic spreadsheet for tracking any professional architectural work that you have participated in and will participate in for NCARB certification.

Supplies/Equipment:
Purschase IESVE by Monday January 26, 2015. All pertinent materials required to work in studio toward meeting deadlines, and reviews, and/or the completing final project. We will be doing large scale studies, models, hand drawings, writing and computer work so be prepared to use all types of materials and forms of expression. MUST HAVE PRINTED OUT DOCUMENTS FOR DESK CRITS AND SOME REVIEWS - HAVE ACCESS TO AN 11 X 17 PRINTER
### CALENDAR

#### January

<table>
<thead>
<tr>
<th>M</th>
<th>T</th>
<th>W</th>
<th>TH</th>
<th>F</th>
<th>S</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

- **January 21**: First day of studio
- **January 26**: Sketch problem in class
- **January 30**: Research/discuss readings

#### February

<table>
<thead>
<tr>
<th>M</th>
<th>T</th>
<th>W</th>
<th>TH</th>
<th>F</th>
<th>S</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

- **February 6**: Analysis and site model complete
- **February 9**: Preliminary conceptual design study models in site study models, concept sketches with structure and systems
- **February 13**: Developed conceptual design & program
- **February 23**: Schematic design proposed with IESVE simulations

#### March

<table>
<thead>
<tr>
<th>M</th>
<th>T</th>
<th>W</th>
<th>TH</th>
<th>F</th>
<th>S</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
</tr>
</tbody>
</table>

- **March 4 and 6**: Mid-term presentations
- **March 18**: Schematic design and finalized/graduating board
- **March 23**: Preliminary design development

---
Required Books/Program:

Required book:

Required program:
IESVE for architects: http://www.iesve.com/software/download/ve-for-students

Initial Reading (more on D2L)

Multiple other books/articles will be suggested during the studio. I also expect that you will research and bring your own books to studio to share with all of us.

McDonald Studio Attendance Policy:

Three (3) late and/or leaving early will equal one absence. Being unprepared for class will also count for one late/leaving early. More than three (3) absences will result in a grade reduction. If you have an emergency or are not able to turn in an assignment, please contact me by E-mail smcdonald@siu.edu as soon as possible.
ASSIGNMENTS’ PERCENTAGES OF TOTAL GRADING

1 .................................................. 15 %
2 .................................................. 15 %
3 .................................................. 70 %

100 %

3 (Feb 23) ...................................... 10%
3 (midterm) ................................. 15%
3 (April 13) ................................... 10%
3 (Final) ................................. 45%

See the General ARC452 Information as well

What Is An “A”
An “A” indicates work that is exceptional, out of the ordinary, and above and beyond what was required for the project. Hard work does not always yield this. Being in class every day does not always yield this. Three “all nighters” does not always yield this. A grade of “A” means that you have carried one or more aspects of the project to an extent which makes the work superior in a number of dimensions.

What Is A “B”
A “B” grade indicates that what you have accomplished is good. It is above average. It is more than required to satisfactorily complete the problem. Being in class every day does not always yield this. Three “all nighters” does not always yield this. Hard work does not always yield this. A grade of “B” indicates that you are going about your project in a way which distinguishes it from the average.

What Is A “C”
A “C” means you have done everything that was expected, you came to class, worked very hard, and generated a response to the problem that was average, acceptable. It does not mean you have failed. It means you have performed in a satisfactory way. Doing a project, working hard does not carry with it the guarantee of satisfactory results. The evaluation of your work will be neither inflated or deflated. It will be professional and straightforward. You will be given you the evaluation of your work in the context in which it is done.

What Is A “D” Or An “F”
These grades indicate a substantial lack of understanding and achievement.

Answer the following Questions:
1. Can I work very hard and still attain one of these grades?
2. Can I work three days straight, not sleeping; not working, not attending to personal needs and still attain one of these grades?
3. Can I be in class every day and still attain one of these grades?
4. Can I complete each project requirement and still attain one of these grades?

If you answer “No” to any of these questions you do not understand the grading policy.
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://saluki cares.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://tutoring.siu.edu/
Math Labs: http://tutoring.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
ADVISEMENT: http://advisement.siu.edu/
SIU ONLINE: http://online.siu.edu/

Spring 2015 R.O'Rourke
1 individual research
DUE JAN 30 (1:00) presentation and print -out

A. what are the emerging transportation ideas?

B. what is architecture and how is society defined by transportation?

C. what is mobility?

D. why a multi-modal station?

E. how have we been defining and redefining how we move thru space?

research people/theories/ideas about transportation and architecture and choose one combination to write/sketch/diagram concerning the connections between the three (show research and sources)
Examples to explore and search more of your own - then choose one to create a presentation to the class (no two people should do the same one - be prepared on Friday to tell me what you want to do):

Frank Lloyd Wright, Bauhaus, Buckminster Fuller, Paolo Soleri, Andres Duany/Elizabeth Plater-Zybeck, MIT- CityLab/Urban Mobility, TEAM 10(X), LeCorbusier, Personal Rapid Transit, Bruce Mau, New York, NY, Keller Easterling, Los Angeles, CA, Columbia, MD, Smart Growth

Presentation should be a power point and show history, theory, people and the transportation/architecture relationships. Clearly describe in words, diagrams, pictures the combination of people, theory/ideas/writings and design. Use the Library and the web!!!

Your librarian, Sarah Prindle, is your lifeline for research assistance and development. Her office hours are Thursdays 12:00-2:00pm at the Information Desk, as well as Thursdays 2:00-3:00pm and Fridays 10:00am-12:00pm in her office (Morris Library 260C). You can contact her anytime with questions or for an appointment at sprindle@lib.siu.edu or 618-453-1249.
2 PRELIMINARY team/individual ANALYSIS (this must be completed by feb 06)

1. Site model - TEAM OF SIX STUDENTS
2. Analysis - ONE STUDENT PER ANALYSIS

TEAM STUDY

Construct a site model showing context for the multi-modal site conditions for all in the class to use to study their solutions. Determine how much to include and scale, be prepared on Wednesday January 28 to discuss with me all base documents and information to construct.

INDIVIDUAL STUDY

Present and print out 11 x17 power point presentation of the following Information:

a. Context and Site Analysis
b. Codes and IDP
c. History of Transportation in general
d. Case Study Analysis - Multi-Modal and/or Train stations
e. Environmental and Systems Analysis
f. Structural Systems Analysis
g. Building Materials, Assemblies & Envelope Systems
h. Lighting Design Analysis
i. Energy Flows, Energy Future and Long Life
ANA\v{L}YSIS

1. what is analysis?
diagrams, information, drawings and text where you have researched and interpreted the information so that others can learn from your work

2. why do analysis?
to understand for ourselves, to convey simply to others, to learn from, to apply as appropriate to your ideas

3. powerpoint presentation of your research and analysis.
PDF version of your presentation uploaded to the proper location on D2L in 11x17 format. Include bibliography of all sources cited and consulted (printed for hand-in and in pdf listed above). You will be graded on the quality of the analysis you have done, the sophistication of the means of conveying that information, and the quality of the visual presentation you have created.

What to include in an analysis as a starting point - you may have more depending on the specifics:

Context and Site Analysis

a. Land Use including built-form, open space, landscape and facility use, shown in diagrams
b. Circulation including pedestrian, ADA, bicycle, automobile, light
service, heavy service, deliveries, fire department, security, public bus, private bus, rail, staff, student, and visitor parking

c. Complete the context analysis including the selected site’s existing and past uses, relationship to the project and the community
d. Figure-Ground
e. Social and cultural
f. Landscape
g. Pedestrian/ vehicle /movement studies

Codes and IDP

a. local building codes - construction type, fire resistance rating, dead end corridors ...
b. local zoning codes - height restrictions, FAR ratio..
c. ADA
d. energy
e. specifics to multi-modal and transit

History of Transportation in general as related to the built environment

a. an overview of how people traveled and its relationship to how we built our homes and cities

Case/Precedent Studies - each of these should be separate analysis

a. program and spatial relationships
b. plan/section - circulation (inside and outside)
c. plan/section relationship to the site/orientation
d. site and building sections
e. surrounding context
f. structural system: grid, material and dimensions
g. mechanical systems: location, space required and type
h. lighting as related to building
i. unique conditions
Environmental and Systems

a. Do a full workup of the environmental/climate factors for the site like in ARC481 and as shown in the posted pdf from the Façade Construction Manual.
b. What is the geology and hydrology. contours, soils, vegetation, and site survey.
c. Discuss details of appropriate systems for the site and net zero energy
d. Site ecology
e. Appropriate passive and HVAC systems choices
f. Ventilation

Structural Systems Analysis

a. tensile structures
b. compressive structures
c. trusses
d. shear structures
e. bending structures

Building Materials, Assemblies & Envelope Systems

a. modern sustainable facades
b. historic assemblies
c. enclosure performance, air, water and thermal - what are the key details and how is performance measured?

Lighting Design Analysis

a. passive lighting
b. different types of lighting such as task, general and accent
c. control systems
d. new technologies
e. reflected ceiling plans

Energy Flows, Energy Future and Long Life

a. how to reduce loads
b. integration of building systems
c. on-site renewable energy
d. issues with power grid
e. how to think about building resiliency and long life

Final analysis presentations should be in a power point or other visual format that can also be printed in an 11 x 17 format to include in the final presentation.
This is the main component of your semester productions. The sketch problem and the last two assignments have been developed but you are intended to start the analysis and development of your design – assignment three from the semester’s very first week. Thus, be aware that you will be asked to move through this project fairly quickly as there is a great deal of work to accomplish by the end of the semester in order to generate a truly developed design. However, consider that every piece of information produced for you and your classmates during the other assignments is very important as background data for this your individual project. Do not feel that every decision you make during design process is set in stone. You can manipulate along the way as the design becomes more detailed and more questions are answered. What you do not want either is to scrap an idea entirely and start over. Treasure the complexity of this assignment and quickly establish some parameters for working on the project through sketching, quick models and diagrams.

You will be asked throughout the semester to produce drawings, diagrams, renderings, and models as well as a wide variety of other odds and ends for this assignment. The presentation of these materials will vary based on the situation, but all work should be concise, but thorough and at a bare minimum clear and easy to understand. Some situations such as major pinups and reviews will require a much higher level of sophistication in the graphic presentation of the work.

Very important: do not glue yourself to the computer and stay exclusively virtual. Paper, pencil and study models are valuable tools to create many of your best proposals. There is a time and place for quick sketches on trace and hand-cut study models; there is also a time and place for cad drawings and Revit models. You should jump back and forth between a variety of media and, hopefully, mix media in the representation of your work.
Iterative design process is also of prime importance here in this project. You cannot sit down and expect the first thing you draw or make to be right. Two, three, four, sometimes dozens of iterations of a plan, a detail, a wall section must be explored in order to find the one that is truly successful in the project. Every week you should be able to present to be reviewed a written/drawn exploration of your project that should be recorded in your sketchbook. It should continually evolve in your sketchbook throughout the semester. Along with that statement should be always a parti diagram that establishes the overall conceptual design of your individual project.

Along the way, you also must clearly demonstrate what you learned from the site analysis, the program, and the context, and what you consider to be the critical decisions for the planning of your project. This is a proposal-based studio; the only thing you are expected to produce is your own proposals.

Sustainable design values the unique cultural and natural character of a given region.

- How does your design respond to the region where it’s located?
- How does your design promote regional and community connectivity?
- How does the design relates to the local context and to larger regional issues,
- How does the design promote regional and community connectivity,
- How does the design promote a sense of place, public space and community, Interaction
- How does the design educate its users about the environmental strategies it employs.
1. **Site Plan**: Scale 1/16"=1'-0". Show plot surroundings, buildings, streets, zoning, etc. making clear reference of project’s influence within the zone.

2. **Ground Level Plan**: Scale ⅛"=1'-0". Show project floor plan and buildings’ interiors, public stairways and rest rooms; public areas, open spaces, etc. Label all spaces. Indicate pedestrian walkways and landscaping. Indicate north and graphic scale.

3. **Other levels Plans**: Scale ⅛"=1'-0" Label all spaces. Show windows and doors, stairs, elevators, etc.

4. **Roof Plan**: Scale ⅛"=1'-0". Show all included in Ground Level plan but interiors, plus buildings’ roofs and the terrace areas’ coverings, with the addition of shadows on the ground.

5. **Two building sections/One site section**: Scale ⅛" = 1'-0” One longitudinal and the other transverse (orthogonal to each other) showing basement levels, all cut elements, adjacent streets and other external references. Sections should delineate use of natural light, energy conservation methods and appropriate scale of spaces.

6. **Two wall sections**: scale ¼" = 1’-0.” One longitudinal & transverse wall section from the bottom of the footer to the top of the roof.

7. **Four elevations**: Scale ⅛” = 1’-0” where better showing the project’s spirit.

8. **Project model**: Scale ⅛” = 1’-0” physical model that thoroughly illustrates the scope and intent of your design solution. The model should allow for a clear illustration of the contextual relationship of your project to the site and adjacent structures by the use of a shared context Site Model that allows each student to drop in their individual project.

9. **Interior detail model**

10. **Two exterior site/building perspectives & two interior perspectives (minimum)**: These perspective views should capture the essence of the project as a whole within specific sights.

11. **Work from structures and environmental systems class with lighting and power and hvac layouts from environment systems fall class**.
In your documents you must indicate the following:

- Building materials.
- Structural solution, system and subsystems.
- Lighting solution, system and subsystems.
- Conceptual provisions for heating and cooling system.
- Building envelope and enlarged details.

GRADING CRITERIA

1. Problem statements, program and conceptual solutions.

2. Program Requirements
   a. Development of All Programmed Spaces.
   b. Conformance to Square Footage Requirements.
   c. Compliance with Required Spatial Relationships.

3. Design Logic
   b. Spatial Relationships/Proportions/Adjacencies.
   c. Functional relationship to surroundings.
   d. Compatibility to Existing Context, Site and Climate.
   e. Natural Lighting and Ventilation.
   f. Environmental issues.

4. Code Compliance
   a. Handicapped Accessibility Requirements.
   b. Egress pathways, exits and stairs.

5. Technical Aspects
   a. Materials Selection and Wall, Floor, and Roof Assemblies.
   b. Structural Systems, their Appropriateness and Integration.
   c. Mechanical Systems, rain water collection, yields and ducts.

6. Drawings and other graphics, Model (fit at Site Model) and detailed interior model.

7. Completeness and Clarity of Presentation.