ARC 451: Design Studio VII: Research Electives, 6-CU, fall 2012
Professor Mary Hardin

School of Architecture, CALA
University of Arizona

COURSE DATA

FACULTY
Mary Hardin
mchardin@u.arizona.edu
office hours by appointment

CRITERIA
FULFILLMENT
This course is a required course that satisfies the Studio Stream requirement.

PREREQUISITES
Completion of ARC 402 with a grade of “C” or better.

CONTACT
MWF 1:00-4:50, Cannon Douglass House

COURSE CONTENT

CATALOGUE DESCRIPTION
Design studio with a focus on research/comprehensive design. This course will emphasize research topics within the context of comprehensive architectural design.

COURSE DESCRIPTION
This studio will focus its educational objectives upon the design, energy analysis, budget analysis and construction documents preparation for an affordable single-family residence, in accordance with the guidelines of the Civano Demonstration Grant. The project site is on a five-parcel lot in Barrio San Antonio, on the corner of E. 15th St. and Star Ave. The four houses already constructed there were designed, drawn and built by faculty and students working for the non-profit Drachman Design-Build

Photos/images by Liam Frederick

“Houses are the great paramour for architects, from the most successful all the way down to the most struggling. We draw them on the backs of napkins. Too often, when I look at what builders and developers are doing, we’re not talking about architecture any longer. We’re talking about capitalism at its most obscene. The public has bought into the mediocrity and insipid attitude of manufactured and spec houses, and has given up any hope of creating homes with spirit.”

Samuel Mockbee, Rural Studio

“There is no such thing as a green architecture or a green aesthetic. Instead there are countless ways design can address and synthesize green issues. Green design is not merely a matter of add-ons or product specification. It involves more than insulation, low-emissivity glass, non-polluting paints, and water-conserving toilets. Rather, it influences the form of the whole building and is one of its major generators from the first moments of the design process. As a corollary, pursuing a green agenda is no constraint on creativity but instead a major stimulus toward an architecture that is innovative, significant, and relevant.”

Peter Buchanan, Curator; Ten Shades of Green
Coalition (DDBC) with support from a City of Tucson grant entitled "The Civano Demonstration Project". In addition to the goals of strong design and well-executed construction, the project guidelines include mandates for energy and water conservation. The terms of the grant stipulate that these houses will reduce energy use by 65% (from a Tucson average of 64,000 to 22,400 btus/square foot/year) and reduce water use by 54% (to 53 gallons/person/day for interior use and 28 gallons/day for exterior use). Each residence will be between 1000 and 1200 square feet in area and will house a low-income family selected and qualified through a HUD-approved homeownership program.

OBJECTIVES AND OUTCOMES
After taking this course, students should be able to:

To carry out the comprehensive design and documentation of an energy-efficient and water-conserving dwelling, including an accounting of the budget and a full set of construction documents.

STRUCTURE AND ORGANIZATION
This course is comprised of four assignments and two formal reviews.

COURSE COMPONENTS + CRITERIA OF EVALUATION
The graded components of this course and their criteria of evaluation are:

TEXTS
There are five required readings for this course, comprised of book excerpts and academic papers. Students are expected to participate in discussion sessions scheduled for these readings.

PROJECTS
Assignment #1 requires students to work individually to develop a program for the dwelling site, and design a scheme for a low-cost residence that meets the guidelines for the Civano Demonstration grant.

Review #1 will be conducted by a jury of design-build professionals, in order to determine which project to develop through construction documents.

Criteria for evaluation of Assignment #1 are: fealty to program and site constraints, strength of conceptual organization of scheme, feasibility of structural, mechanical, and material proposals, efficiency of energy and water use, efficiency of budget, and compliance with building and land use codes.

Assignment #2 requires students to work in small groups through design development of one residence. This development will include energy analysis, water harvesting estimations, and budget estimations.

Criteria for evaluation of Assignment #2 are: thoroughness of investigation and depth of development of assigned topic areas.

Assignment #3 requires students to work in small groups through the completion of construction documents for one residence. This will include building code review and land use code review.

Criteria for evaluation of Assignment #3 are: extent of participation in delegated tasks, depth of drawing development, accuracy of drawings, ability to collaborate with teammates for a successful conclusion.

Assignment #4 requires students to prepare a comprehensive presentation of their work, from individual proposal to final cd set for final ARC 451 reviews.

Review #2 will be conducted at the time of all other studio reviews, by faculty, students, and design-build professionals.

Criteria for evaluation of Assignment #4 are: strength of graphic presentation of all pieces of work, clear trajectory of individual emphasis through the history of the group project.

WEIGHT
The Course Components will be weighted as follows:
PROJECTS
Assignment #1 25%
Assignment #2 35%
Assignment #3 35%
Assignment #4 5%
Total 100%

REFERENCES
REQUIRED
2. Conservation Technologies for Affordable Housing, Drachman Institute and Drachman Design-Build Coalition, University of Arizona, 2008.

SEMESTER SCHEDULE
A course calendar is attached to this syllabus.

POLICIES + STATEMENTS
[ Policies below are to adopted as written, except where highlighted. ]

GRADING
Evaluations will be distributed at intervals during the semester and will indicate performance according to the stated criteria of evaluation. Students are expected to use this system to monitor and adjust their performance and to seek additional support from the professor, as appropriate. Evaluations will be based primarily on student’s work, rather than effort expended. Students are expected to acquire knowledge and skill, not merely endeavor to do so.

LATE WORK
Work submitted after the deadline will be graded one or more letter grades below what would have been awarded had the work been submitted on time, appropriate to the length of delay.

INCOMPLETE WORK
Work submitted that is incomplete will be graded one or more letter grades below what would have been awarded had the work been complete, appropriate to the extent of incompletion.

GRADING SCALE
Grades will be defined as follows: [select one; delete other two]

<table>
<thead>
<tr>
<th>Grade</th>
<th>undergraduate criteria</th>
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<tbody>
<tr>
<td>A (90-100)</td>
<td>Excellence in most areas of evaluation, high competence in others.</td>
</tr>
<tr>
<td>B (80-89)</td>
<td>High competence in most areas of evaluation, competence in others.</td>
</tr>
<tr>
<td>C (70-79)</td>
<td>Fulfilled all course requirements with competence. (Competence: the answering of all requirements; adequate fitness, ability, capacity; sufficient for the purpose.)</td>
</tr>
<tr>
<td>D (60-69)</td>
<td>Less than competent work in one or more areas of evaluation. One or more requirements lacking and/or sub-standard quality.</td>
</tr>
<tr>
<td>E (0-59)</td>
<td>Substantially incomplete work and/or work of an unsatisfactory quality.</td>
</tr>
<tr>
<td>Incomplete</td>
<td>Work left incomplete at the end of the semester due to circumstances beyond the student's control.</td>
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</tbody>
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ATTENDANCE
Students are required to attend all classes for their duration. Upon the 3rd unexcused absence (whether in part or for a session's entirety), the final grade will be lowered by 5% per absence.

DOCUMENTATION STANDARDS
A professional standard in contract documents insures that every page indicates sufficient information to link it to its host set and, similarly, every drawing provides sufficient metadata that it is clearly linked to its dataset. In keeping with this data standard, documentation in this course will comply with the following standards:

PROJECT DOCUMENTATION
Every sheet of every project will indicate:
- course number
- semester/year
- professor
- student author(s)
- current date of the work
- page or sequence number

DRAWING DOCUMENTATION
Every drawing will indicate:
- drawing type (plan, section, elevation, perspective, axonometric, etc.)¹
- graphic scale²
- orientation indicator (north arrow for plan; directional description for vertical projections (e.g., South Elevation; Perspective Looking North)
- reference indicators (section and elevation markers, blow-up references) that link the drawing to relevant documents

ARCHIVE DOCUMENTATION
Work submitted for this course, whether interim or final, must comply with the School’s documentation standards so we comply with accreditation requirements. See the School Policy on Documentation.

CLASSROOM BEHAVIOR + STUDIO CULTURE
The use of cell phones, pagers, electronic devices or other materials unrelated to course specific activities are not permitted during course hours; neither are unauthorized discussions amongst students or other disturbances.

All electronic media is limited to narrowcasting (headsets) at all times, set to a volume that is not audible to others. Per the University policy, non-assist animals are forbidden from University buildings.

ACADEMIC POLICIES
Academic policies can be found in The University of Arizona General Academic Catalog:
http://catalog.arizona.edu/allcats.html

For the principles, policies, and procedures governing issues of academic integrity, see:
http://deanofstudents.arizona.edu/codeofacademicintegrity.

PLAGIARISM
The practice of taking someone else's work or ideas and passing them off as one's own is known as plagiarism and is a violation of academic and professional ethics. This applies both to professional and public works as well as to the work of student peers. Students shall be assiduous in citing the work of others, whether in copying a graphic, either in part or in total, quoting a text, or in building upon ideas, designs, or forms.

Building upon the work of others is entirely proper (and is in fact inevitable), so long as the citation is properly attributed. Citations should include both the work (including its name, location, designer, and date) as well as the source from which the information about the work was obtained (which should follow the Chicago Manual Of Style: http://www.chicagomanualofstyle.org/tools_citationguide.html.)

¹ A “DETAIL" is not a drawing type. Every drawing is a detail, considered from some perspective.
² It is essential that all drawings have graphic scales, as notational scales are meaningless with digital documentation and dissemination.
This course follows the University of Arizona’s Policy on plagiarism: http://deanofstudents.arizona.edu/codeofacademicintegrity

THREATENING BEHAVIOR
All participants must follow the University of Arizona’s Policy on student behavior: http://deanofstudents.arizona.edu/sites/deanofstudents.arizona.edu/files/disruptive_threat_bklt_web_0.pdf

HANDICAPPED ACCESSIBILITY / DISABILITY RESOURCE CENTER
Every effort will be made to accommodate students with diagnosed disabilities. Please contact the instructor to initiate a discussion about how we can best help you succeed in this class. If you are registered with the Disability Resource Center please submit the associated documentation to the instructor. http://drc.arizona.edu/teach/syllabus-statement.html

RETENTION OF WORK
Work produced in this course is the property of the School of Architecture, which may retain any student project for display, accreditation, documentation, or other purposes.

CHANGES
This syllabus is subject to change with notice, as deemed appropriate by the instructor.

The purpose of a detailed syllabus is to make the course as transparent and as objective as possible, and thus to empower students to understand and earn the grades to which they aspire. It is not the intention of such a system to be used against learning or fairness.

Consequently, the professor retains the right to make adjustments that account for circumstances that were unforeseen when the course was designed and will notify the students when such changes are made. It may, for example, be advantageous to add or alter assignments or their criteria, or to modify criteria or project-weights, if it becomes evident that it is in the best interest of learning and fairness to do so. Students will notify the professor within one week of notification if such changes engender a hardship, after which time it will be agreed that students understand and are in accord with the change.

end of syllabus
Materials in this course may be copyrighted. They are intended for use only by students registered and enrolled in the course and are only for instructional activities associated with and for the duration of the course. They may not be retained in another medium or disseminated further without the written permission of the instructor. They are provided in compliance with the provisions of the Teach Act: http://www.copyright.com/Services/copyrightoncampus/basics/teach.html. Students should refer to University copyright policies: http://www.library.arizona.edu/help/tutorials/copyright/index.html