

ARCH 593 Solar Decathlon: Past - Present - Future

Faculty: Mark Taylor
Credit: 3 hours

Meeting time: Tuesdays 9.30am – 12.20pm.
Locations: IsoA Woodshop & Gable Home

Between 2008 and 2009 an interdisciplinary team of students in conjunction with a modular home manufacture built the Gable Home to compete in the US Dept. of Energy's 2009 Solar Decathlon Competition. The house was ahead of its time in many aspects. The house was built to Passive House US certification to inform the design. Innovative systems were used to generate power, conserve energy, as well as create desirable indoor air quality and comfort.

The student designed and built Gable Home: https://www.architectmagazine.com/design/university-of-illinois-gable-home_o will act as a “muse” for the seminar. During the semester it is expected that each student will experience the home, understand the basic principles behind the design and construction of the house, what works in the house, and what could be improved on, or made more affordable.

Past: In addition to learning about the house there will be opportunities to delve into the past by researching the origins of the Dept. of Energy's Solar Decathlon Competition, how the rules of the competition have changed over time to either drive or respond to market and industry demands. There will be the opportunity to look back on over 160 houses that have been designed and built to compete in the Solar Decathlon. Research can be undertaken into which houses placed in the top 3 positions in the competition as well as different individual contests.

Present: As the seminar will take place each week in the Gable Home there is the opportunity to rectify some of its failings, experience the systems at work in the house, and develop new versions of the house using different materials and assembly processes. Students can opt to work independently or in small groups from a selection of tasks and opportunities. Below is a list of some of the research and learning opportunities that can be pursued during the semester:

Projects:

1. Address deficiencies in flashing and ways to keep wildlife out of the structure.
2. Describe and illustrate the geothermal system
3. Redesign the fresh air intake and exchange in the home
4. Develop landscaping plans
5. Establish links with the current Illinois Solar Decathlon team

Future/Current: Within the class there will be opportunities to become engaged with the design development of the next/current Solar Decathlon / BuildingsNEXT Student Design competition project located in the town of Rantoul. In addition, based on an understanding of the project houses of the past, and the evolution of the rules, students will have the opportunity to speculate what a future entry into the BuildingsNEXT Student Design Competition may look like.

No matter which scale or context a student elects to work at, each project will be evaluated based on the University of Illinois standards for assessing student work.

Letter grades for the course are established as follows:

- Excellent (A+, A, A-): This grade is reserved for work of exceptional quality. Project is fully developed and presented skillfully, both visually and verbally. All project requirements are met or exceeded.
- Good (B+, B, B-): Student's work shows above-average understanding and clear potential. All project requirements are fulfilled and are clearly and concisely presented.
- Fair (C+, C, C-): Student's work meets minimum objectives and shows normal level of understanding. Quality of project is adequate.
- Poor (D+, D, D-): Student's work shows limited understanding and/or effort. Minimum project requirements have not been met. Quality of project or performance is below average.
- Failure (F): Student's work is unresolved and/or incomplete. Minimum project requirements are not met, and student's work shows lack of understanding and/or effort. Quality of project or performance is not acceptable.
- ABS: Absence from the final presentation without an acceptable excuse counts as failure, not acceptable for degree credit. If a student is absent from a final presentation and it is clear that the presentation could not have resulted in a passing grade for the studio, a grade of F may be given instead of ABS.
- Incomplete (I): A grade of Incomplete can be given only for extreme medical reasons and must be approved by the instructor and authorized by the Dean's Office

Grades for this course are calculated and averaged according to the UIUC Grading System:

A = 4.00	A- = 3.67	
B+ = 3.33	B = 3.00	B- = 2.67
C+ = 2.33	C = 2.00	C- = 1.67
D+ = 1.33	D = 1.00	D- = 0.67
F = 0		

Default Canvas Grading Scheme

Letter Grade	Range	
A	100%	to 94%
A-	< 94%	to 90%
B+	< 90%	to 87%
B	< 87%	to 84%
B-	< 84%	to 80%
C+	< 80%	to 77%
C	< 77%	to 74%
C-	< 74%	to 70%
D+	< 70%	to 67%
D	< 67%	to 64%
D-	< 64%	to 61%
F	< 61%	to 0%

All work is assumed to be that of the student presenting it. Work done by others – including any images or text taken from publications or the internet – must be properly credited and documented. Failure to do so will be regarded as plagiarism, and the student will be disciplined according to the University's *Student Code* (<http://admin.illinois.edu/policy/code/>).

SCHOOL POLICY ON STUDIO ATTENDANCE

1. Attendance is required at all classes. Three (3) unexcused absences will result in a full letter-grade reduction for the semester (from B+ to C+, for example). Any additional unexcused absence beyond this amount will result in a failing grade or at the Professor's discretion.
2. Students must attend all classes, reviews, lectures, etc. in their entirety. If a student arrives late or leaves early, without the consent of the instructor, the student may be considered absent for the entire class. Repeated patterns of late arrival or early departure will be noted and considered as unexcused absences.
3. An absence may be excused for medical or family emergencies. These emergencies must be supported by proper documentation, such as a doctor's note on letterhead or an obituary. The student is responsible for providing proper documentation for the absence to the instructor and must do so prior to the last day of class. The student is solely responsible for arranging for materials, assignments, etc. from a missed class session.
4. An absence will not be considered an excused absence if it is for any other reason, including work, vacation, or computer failure.
5. Students who wish to observe religious holidays shall notify the instructor by the tenth day of the semester of the date(s) when they will be absent unless the religious holiday is observed on or before the tenth day of the semester. In such cases, the student shall notify the faculty member as soon as possible in advance of the date when they will be absent.
6. Attendance is required at all scheduled studio reviews for the full time period of the reviews (not only for the time period of your own presentation).

LATE WORK POLICY

All assignments are due at the specified date and time indicated by the instructor. In the interest of fairness, all deadlines for assignments will be strictly enforced, with late work resulting in grade penalties as follows:

1. Work submitted late (after the assigned deadline, but within 24 hours) shall be penalized one full letter grade (from B+ to C+, for example) or at the Professor's discretion.
2. Work submitted more than 24 hours late shall be penalized two full letter grades (from B+ to D+, for example), but work submitted more than 48 hours late is not acceptable and may receive a failing grade or at the Professor's discretion.
3. Students must have all presentation materials prepared and displayed on time for reviews. Missing a scheduled presentation time and/or not presenting at a project review without approval from the instructor is the equivalent of missing an exam and shall be graded accordingly.

EXPECTATIONS FOR DESIGN REVIEWS PRESENTATIONS

1. Studio reviews provide the opportunity for public presentation and discussion of design work. During the semester, students shall be given opportunities to present their work on several occasions, including midterm reviews, final reviews, and intermediate pin-ups.
2. Reviews of student work are provided for the benefit of all students. Faculty will enforce expectations that each student is present for their own review at the assigned time and is present for the reviews of all other students. A student is not allowed to work in the studio or lab right up until their review time.
3. If a student misses their assigned presentation time or is not present at the beginning of the reviews for the class, the student shall not be permitted to present their project at the end of all the reviews

even if the student is present at that time. Such an expectation for special treatment by a student is unfair to both the reviewers and to fellow students.

4. Plotter, laser cutter, or other equipment problems are not a valid excuse for a project being late. You must plan to accommodate any such potential problems.

ADDITIONAL COURSE POLICIES

1. Students are expected to work in the designated studio space during scheduled class time and to come to class fully prepared, having completed all assigned readings and projects. Doing work for other courses during class time is not permitted.
2. Always come to class prepared to work in studio, with all the necessary materials and tools that you will need. You should always have a roll of tracing paper available for desk crits, as well as model-making supplies for quick study models.
3. Students should not expect faculty to provide concepts, ideas, or designs; students must originate these. The studio professor's role is to extend a student's thinking and challenge a student to explore and substantiate their design.
4. A student should not expect to receive design critiques unless clear development of the project has been made since previous discussions, as evidenced by new drawings and/or models.
5. Mobile phones must be silenced during class.
6. Music or other entertainment should not be played aloud during class time. Headphones may be permitted at the discretion of the instructor. During class time, it is not permitted to watch movies or use social networking sites—save it for after class.
7. Students are expected to check their university email account regularly, as important information about the course may be sent out by email throughout the semester.
8. Keep the studio clean. If using messy materials such as plaster or concrete, put down plastic or newspaper to keep floors and desks clean. Never pour unused material into a sink or other drain. Never cut directly on a studio desk and never discard used blades directly in the trash bin.
9. Be sure the studio doors are locked when leaving the room if it is unoccupied.
10. If you need accommodations for any kind of disability, please inform the instructor as soon as possible.

OFFICE HOURS

Outside of class time, the instructor is available to discuss projects or other issues during office hours by appointment. Please email if you wish to make an appointment.

ARCHIVING STUDENT WORK

The School of Architecture is required to collect and archive selected student work for future accreditation visits by the National Architectural Accrediting Board (NAAB). For this purpose or for other uses related to publicity and display, student work in the form of drawing sheets, physical models, and digital documentation may be retained by the school at the end of the semester. Students will be given an opportunity to document this work for their portfolios before it is collected.

Disability Resources and Educational Services

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor as soon as possible and provide the instructor with a Letter of Academic Accommodations from Disability Resources and Educational Services (DRES). To ensure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class should apply for services with DRES and see the instructor as soon as possible. If you need accommodations for any sort of disability, please contact me via email. DRES provides students with academic accommodations, access, and support services. To contact DRES, you may visit 1207 S. Oak St., Champaign, call 217-333-1970, e-mail disability@illinois.edu or visit the DRES website at

<http://www.disability.illinois.edu/>. Here is the direct link to apply for services at DRES, <https://www.disability.illinois.edu/applying-services>.

Counseling and Mental Health Support

Counseling Center

Information: 217-333-3704

Location: Room 206, Student Services Building 610 East John Street, Champaign, IL Hours: 8 a.m. – 5 p.m., Monday through Friday

Appointment: Scheduled for same day, recommend calling at 7:50 a.m. Website: <https://counselingcenter.illinois.edu/>

McKinley Mental Health

Information: 217-333-2705

Location: 3rd Floor McKinley Health Center 1109 South Lincoln, Urbana, IL Hours: 8 a.m. – 5 p.m., Monday through Friday

Appointment: Scheduled in advance

Website: <https://mckinley.illinois.edu/medical-services/mental-health>