




2015

Syllabus: Solar Energy Systems and Building Design

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BCT 597SD – Solar Energy Systems and Building Design

Schedule: Tuesdays & Thursdays, 2:30pm – 3:45pm
Location: 105 Holdsworth Hall
Credits: 3

Instructor: Ho-Sung Kim, Ph.D.
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Office Hours: <https://kimhs.youcanbook.me/>

Objective: This course introduces the fundamental concepts of solar building design and energy systems. Through project based study and possible field visits, students will explore the theory, technologies, applications, and benefits of solar design of buildings and discover how to utilize solar energy systems for residential and commercial buildings. Students will be required to research and document technology and complete a semester case study project in which they will examine various energy conservation aspects and economics underlying solar energy systems.

Format: This course will use formal lectures, informal class discussions, possible field visits or tours, and (potentially) guest speakers to achieve the objectives noted above. We will try to split our time equally between formal lectures and the other modes of learning, using the lectures for the formal introduction of the main course topics and all other class periods for the more practical application of the lecture material.

Text Book: *3rd Edition* of “*Heating, Cooling, Lighting: Sustainable Design Methods for Architects*” by Lechner

Grading: Final course grades are based on the following scale:

15% Attendance / Participation
50% Research Papers / Presentations
35% Semester Project

Grades will be assigned using the “+” and “-” system and will be based on a combination of absolute achievement and relative performance.

Attendance / Participation:

Attendance and participation are mandatory in this course and as a result will have an assigned grade. Attendance is simply physically attending all scheduled class times. Participation goes beyond physically being in attendance and will be a measure of how much a student contributes to the course through answering and asking questions, providing insightful comments, enhancing one’s own learning experience and that of others during class, etc. Consistency (attending all classes and being an active participant all semester) is the key element in earning a favorable attendance and participation grade.

Research

Papers:

Several research papers and one research paper presentation will be assigned throughout the semester to reinforce and expand upon material covered during class. Assignments will be handed out during class, complete with instructions, due dates, and any necessary reference listings.

Research papers will require students to do independent study on topics related to this course. Research papers may be related to a student's semester project provided the semester project is not simply a restatement of the research papers.

Research papers are to be 5 to 8 pages of text in length (maximum of 20 pages total including reference list, figures, title page(s), etc.) and should be structured like a paper that would appear in a journal or conference proceedings. Thus, the paper should include introduction, main section(s), discussion (if appropriate), and conclusion sections followed by a list of references (texts, journal articles, web addresses, etc.) and any supporting figures. All assignments will be submitted electronically. Due dates will be strictly enforced and late submissions will not be accepted.

All students will be required to make formal class presentations on their research papers. The grades for all papers will be based both on the submitted report and the in-class presentation/discussion.

Semester

Project:

All students are required to submit a semester project in lieu of a final exam. Semester projects are due on Tuesday, December 1, 2015 at 2:30pm. Project presentations are tentatively scheduled for Tuesday, December 1, 2015, Thursday, December 3, 2015, Tuesday, December 8, 2015, and Thursday, December 10, 2015 during class. Project requirements will include only a formal presentation of the project to the class. Projects may be report or design based. Report based projects may build on the topic covered in one of the research papers but must go significantly beyond what was discussed. A design based project might include the analysis/critique of an existing design, the redesign of a building, or a design project. The design based project should focus on the application of solar energy systems. Late submissions will not be accepted. In addition, each student will be required to meet with the instructor at least once during the semester to discuss the project and the student's plans. This meeting may take place as early in the semester as the student desires but should take place no later than early November. Additional meetings may be arranged as desired and as the instructor's schedule allows. Exact submission requirements for the semester project will be announced in class.

Excused

Absences:

In the case of illness or other emergency, the student must obtain a written verification from the health provider or the Dean of Students Office. If the student is officially excused on or near the date of the course deadline, a new deadline may be negotiated with the instructor.

Other

Policies: There are no provisions for “extra credit” in this course, and none can be negotiated with the instructor.

Course policies as outlined in this syllabus are not open to negotiation. In the interest of fairness to all of the students enrolled in this course, exceptions other than the ones outlined in this syllabus will not be allowed.

Academic Honesty Policy Statement

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst.

Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. The procedures outlined below are intended to provide an efficient and orderly process by which action may be taken if it appears that academic dishonesty has occurred and by which students may appeal such actions.

Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent.

For more information about what constitutes academic dishonesty, please see the Dean of Students' website:

http://www.umass.edu/dean_students/codeofconduct/acadhonesty/

Disability Statement

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), Learning Disabilities Support Services (LDSS), or Psychological Disabilities Services (PDS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements.