

Solar Home Design

ENVS 132 and DSIT 132

1. Course Information

Instructor: Kate Latham

Department: Environmental Studies

College of Social Science, San Jose State University.

Spring Semester, 2007

Course Title:	Solar Home Design
Course Code:	34834 (ENVS) / 35829 (DSIT)
Section:	02
Class Hours & Location:	9:00-11:45am, Friday, DMH164
Office Hours:	12-1:15pm, Mon. & Fri., & by appointment
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Preferred Contact:	phone or email

2. Course Description:

a. Course Overview and Description:

Americans use an inordinate amount of energy to realize the standard of living to which we all have come to enjoy. Not only do we enjoy this standard of living, we expect it. Yet, to live as we do requires a tremendous amount of energy and resources.

The residential sector uses one-fifth to one-fourth of all energy consumed in the United States. There are many ways to reduce this energy consumption and resource consumption without diminishing our comfort levels or “doing without”. This class will explore ways to live with environmental responsibility and integrity when it comes to our homes.

b. The course is developed around four themes:

1. PASSIVE HEATING AND COOLING OF THE HOME: The basics of integral solar home design for heating and cooling, sunspace additions to homes, and direct gain for new construction and remodel.

2. ENERGY EFFICIENCY: How to make a home more energy efficient than conventional homes. How to decrease our impact on the environment through the way we live in our homes.

3. **GREEN LIVING:** Using 'green' building materials for construction and interior living spaces.

4. **HEALTHY HOMES:** Often, indoor air is more polluted than outside air. We will explore ways to prevent this.

a. Prerequisites: none

b. Required text:

The Solar House: Passive Heating and Cooling. By Daniel D. Chiras, published by Chelsea Green Publishing Company, 2002.

c. Recommended reading:

The Homeowner's Guide to Energy Independence: Alternative Power Sources for the Average American. By Christine Woodside, published by The Lyons Press, 2006.

Natural Remodeling for the Not-So-Green-House: Bringing Your Home into Harmony with Nature. By Carol Venolia and Kelly Lerner, published by Lark Books, 2006.

Good Green Homes: Creating Better Homes for a Healthier Planet. By Jennifer Roberts, published by Gibbs Smith, 2003

d. Other Reading materials: class handouts

e. Student learning objectives for the course: Objectives for this course are to learn what a solar home is and how to design one. Furthermore, we will learn how to be energy efficient in homes, what "green" materials are available for homes, how to use less toxic materials within a home, and how to make and keep your home healthy.

3. Course requirements:

a. Projects: Field Book Assignment (18 points)

Keep notes on all field trips and speakers. Take pictures.

Write down the date, what you saw, what features were involved, function of the features, significance of the feature, what you learned.

Whose house did you go to, what speaker were you listening to.

b. Exam: One mid-term (worth 15 points)

c. Homework:

Ecological Footprint - (2 points)

Floor plan Assignment - Part 1 (10 points)

Floor plan assignment – Part 2 (10 points)
Green Building Presentation – (20 points)
Direct Gain assignment – (15 points)

d. Class Participation: worth 10% of your grade (10 points). Please feel free to enjoy yourself in an informal yet stimulating class. I believe that the best learning takes place when students are excited about their studies – are involved in discussions, debates, and new ideas – and are provided with positive reinforcement. I am hoping that his informal atmosphere will foster trust, respect, and open communication. In a constructive manner, I expect you to challenge the material presented in this class and I look forward to your input.

There will be in-class write-ups, and will take place as either a group or on an individual basis. They will not be announced and will often take place right when class starts. These are not graded but will be recorded that you have done it, and will count toward your participation grade.

e. Penalty for late or missed work: 10% deduction for work if it is handed in within a week of when it is due. After that I will not accept late assignments. This is for two reasons. One, it is not fair to the students that work hard to turn their assignments in on time. Two, late papers create extra work for the teacher (me). Exceptions *might* be made if I am told ahead of time what the problem is. Exceptions fall under the category of hospitalization, death in the family, care-taking duties, and documented illness. If you are home with a cold or the flu, you can still email assignments as attachments. But, all assignments that are emailed to me will have a 5% deduction in points. This is because I don't want to take my own time, paper, and ink to print out your assignment. Also, students might assume that they can skip class the day an assignment is due if they know they can email the assignment.

4. Tentative course calendar including assignment due dates, exam dates, date of Final exam:

(Please note that the course calendar is “subject to change with fair notice”)

TENTATIVE CLASS SCHEDULE – Spring 2007

Jan. 26 #1	Introduction		
Feb. 2 #2	Features of a Solar Home – Solar Hot Water	Read Chap. 1	EF & Energy Audit due
Feb. 9 #3	Fieldtrip	Hidden Villa \$5 fee Los Altos Hills	
Feb. 16 #4	Passive Solar Heating	Read Chap. 3 and 4	
Feb. 23 #5	No class – Fieldtrip on February 25	Sullivan House Soquel	Floor plan – Part 1 due
Mar. 2 #6	Passive Solar Cooling	Read Chap. 5	
Mar. 9 #7	Fieldtrip	Kirsch Center De Anza College	
Mar. 16 #8	Energy Eff. Design Health Considerations	Read Chap. 2 and 6	
Mar. 23 #9	Fieldtrip	Wagner/Griffin Palo Alto	Floor plan – Part 2 due
Apr. 6 #10	Energy Efficiency		Class presentations
Apr. 13 #11	Fieldtrip	Schiavo/Kelly San Jose	
Apr. 20 #12	Green Homes		Class presentations
Apr. 27 #13	Fieldtrip	Eric Jorgensen San Jose	Direct Gain project & Field book due
May 4 #14	Healthy Homes		Class presentations
May 11 #15	Last day of class!		Mid-term & Direct Gain presentations

5. Grades:

Assignments	57%
Midterms	15%
Class Project	18%
Class Participation	10%
Total	100%

a. Grading information:

Grading Percentage Breakdown

94% and above	A
93% - 90%	A-
89% - 87%	B+
86% - 84%	B
83% - 80%	B-
79% - 77%	C+
76% - 74%	C
73% - 70%	C-
69% - 67%	D+
66% - 64%	D
63% - 60%	D-
below 60%	F

6. University, College, or Department Policy Information:

a) Academic integrity statement (from Office of Judicial Affairs):

"Your own commitment to learning, as evidenced by your enrollment at San José State University and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty is required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at <http://www2.sjsu.edu/senate/S04-12.pdf>

b) Campus policy in compliance with the Americans with Disabilities Act:

"If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with DRC to establish a record of their disability."

7. APPENDIX:

- “You are responsible for understanding the policies and procedures about add/drops, academic renewal, withdrawal, etc. found at <http://www2.sjsu.edu/senate/S04-12.pdf>
- Expectations about classroom behavior; see Academic Senate Policy S90-5 on Student Rights and Responsibilities.
- As appropriate to your particular class, a definition of plagiarism, such as that found on Judicial Affairs website at <http://www2.sjsu.edu/senate/plagiarismpolicies.htm>
- “If you would like to include in your paper any material you have submitted, or plan to submit, for another class, please note that SJSU’s Academic Integrity policy S04-12 requires approval by instructors.”

Department of Environmental Studies Mission Statement:

"to provide a rigorous, systematic, and integrated approach to the study, management, and solution of environmental problems and issues."

Assignment – due February 2nd

Ecological Footprint (EF) Assignment (1 point for each printout):

- www.myfootprint.org
- www.bestfootforward.com/footprintlife.htm

Go to both websites and take the EF quiz. At the myfootprint.org website, put the “hand” on the United States and then click on whatever language you wish for the quiz. I want print-outs of your results from both websites for comparison.