

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.

Fall Semester, 2006

Course Title:	Solar Home Design
Course Code:	47550 (ENVS) / 48338 (DSIT)
Section:	01
Class Hours & Location:	9:00-11:45am, Friday, DMH359
Office Hours:	by appointment
Office Location:	WSQ 115
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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.

The course is now developed around three 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.

b. Prerequisites: none

c. Required and recommended texts, readers, or other reading materials:

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

Order this book on line.

Half.com:

http://search.half.ebay.com/The-Solar-House-Passive-Heating-and-Cooling_W0QQmZbooksQQqueryZTheQ20SolarQ20HouseQ3aQ20PassiveQ20HeatingQ20andQ20Cooling

Amazon.com

<http://www.amazon.com/exec/obidos/search-handle-url/102-4674098-1792917?url=index%3Dstripbooks%3Arelevance-above&field-keywords=The+Solar+House%3A+Passive+Heating+and+Cooling&Go.x=10&Go.y=9>

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. 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.”

4. 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.”

Course requirements:

a. Projects: Field Book Assignment (worth 10 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 too.

b. Exams: Two mid-terms worth 15 points each

c. Homework:

Ecological Footprint and Energy Audit – worth 5 points

Floor plan Assignment – Part 1 (worth 15 points)

Floor plan assignment – Part 2 (worth 15 points)

Direct Gain assignment – (worth 20 points)

d. Class Participation: worth 5% of your grade (5 points)

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

Aug. 25 #1	Introduction		
Sept. 1 #2	Features of a Solar Home Chap. 1		EF & Energy Audit due
Sept. 8 #3	Passive Solar Heating Chap. 3		
Sept. 15 #4	Eric Jorgensen		
Sept. 22 #5	Sun room field trip Schiavo/Kelly		Floor plan – Part 1 due
Sept. 29 #6	Passive Solar Cooling Chap. 5		
Oct. 6 #7	Presentation Center		
Oct. 13 #8	Insulation Chap. 2		Mid-term
Oct. 20 #9	Direct Gain field trip Ott/Denevan		Floor plan – Part 2 due
Oct. 27 #10	Karen Beck – green homes		
Nov. 3 #11	Eric Jorgensen		
Nov. 10 #12	No class – Veterans Day		
Nov. 17 #13	Native Landscaping		Direct Gain project & Field book due
Nov. 24 #14	No class – Thanksgiving		
Dec. 1 #15	Last day of class!		Mid-term & Direct Gain presentations

Grades:

Assignments	55%
Midterms	30%
Class Project	10%
Class Participation	5%
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