

San José State University
Environmental Studies Department
Energy & the Environment ENVS/DSIT 132

Course and Contact Information

Instructor:	Benoit Delaveau, M.S, CEM, BEAP
Office Location:	TBA
Email:	benoit.delaveau@sjsu.edu (Use Canvas messaging)
Office Hours:	Office Hours: ALWAYS book me on: https://calendly.com/benoit-delaveau
Class Days/Time:	Monday 4:30-7:15
Classroom:	Clark 243
Prerequisites:	Passing the WST http://testing.sjsu.edu/wst/

Faculty Web Page and MYSJSU Messaging

You are responsible for **daily** checking with the messaging system through MySJSU and Canvas. All course materials such as the syllabus, calendar, assignments, readings, and handouts are posted to canvas: <https://sjsu.instructure.com>. Log in with your SJSU One account info. For assistance see: <http://www.sjsu.edu/at/ec/support/>

Course 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 between one-fifth and 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 and build residential houses with environmental responsibility and integrity when it comes to energy and water usage, studying case studies, and the passive building principles.

Course Goals

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty- five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to outside investigations, interviews and field visits and measurements.... Other course structures will have equivalent workload expectations as described in the syllabus.

Here are the four basic building science principles that the course will cover and that will be the basis for student tests.

1. **PASSIVE HEATING AND COOLING DESIGN FOR HOUSES:** The basics of integral solar home design for heating and cooling, sunspace additions to homes, and direct gain for new construction and remodel.
2. **HOME ENERGY EFFICIENCY:** How to make a home more energy efficient than conventional homes improving heating/cooling systems, the building envelope, lighting, and appliances and working on occupant behaviors. How to decrease our impact on the environment through the way we live in our homes.
3. **GREEN LIVING:** Using 'green' and recycled 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.

Required Texts/Readings

The Solar House: Passive Heating and Cooling. By Daniel D. Chiras, published by Chelsea Green Publishing Company, 2002. Available on Amazon.com (instant download available on Kindle/Kindle apps).

Midori Haus. Transformation from Old House to Green Future with Passive House. By Chie Kawahara. Published by HybridGlobal Publishing. Available on Amazon.com and Apple Books (instant download available).

Consumer Guide to Home Energy Savings. 10th edition by Jennifer Thorne Amann, Alex Wilson, and Katie Ackerly, published by New Society Publishers, 2012. Available on Amazon.com (instant download available on Kindle/Kindle apps, hardcopy book strongly recommended)

Other Readings (lectures material - no need to purchase) Articles and handouts are posted to Canvas:

Residential Energy: cost savings and comfort for existing buildings. 5th edition by John Krigger and Chris Dorsi. Published by Saturn Resource Management, Inc., 2004.

The Home Energy Diet: how to save money by making your house energy smart. By Paul Scheckel, published by New Society Publishers, 2005.

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

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

Library Liaison

Peggy Cabrera <Peggy.Cabrera@sjsu.edu> https://libguides.sjsu.edu/prf.php?account_id=41832

Course Requirements and Assignments

Dropping and Adding: Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, ... Refer to the current semester's Catalog Policies.

Grading: Use the percentages below and your scores to monitor your grade. Real time grade will be available along the semester on Canvas.

Credit-hour statement: This three-unit course requires a minimum of 9 hours per week to complete class-related readings and assignments (roughly 2.5 hours in class and 6.5 hours outside class per week.) More details about student workload can be found in University Policy S12-3 at <http://www.sjsu.edu/senate/docs/S12-3.pdf>

Academic integrity: As part of the GE program, strict enforcement of SJSU Academic integrity rules will be enforced. See the University Policy at https://ischool.sjsu.edu/sites/main/files/file-attachments/academic_integrity_policy_f15-7_0.pdf?1539701808

Online tools and conduct

Technology Requirements: Students are required to have an electronic device other than a smartphone like a laptop, desktop or tablet, with a camera and a microphone. SJSU has a free equipment loan program available for students. Students are responsible for ensuring that they have access to reliable Wi-Fi during tests. If students are unable to have reliable Wi-Fi, they must inform the instructor, as soon as possible are at the latest one week before the test date to determine an alternative. See Learn Anywhere website for current Wi-Fi options on campus.

Proctoring Software and Exams: Exams and Quizzes will be proctored in this course through Respondus Monitor and LockDown Browser. Please note it is the instructor's discretion to determine the method of proctoring. If cheating is suspected the proctored videos may be used for further inspection and may become part of the student's disciplinary record. Online Exams

Testing Environment Setup:

- No earbuds, headphones, or headsets visible.
- The environment is free of other people besides the student taking the test.
- If students need scratch paper for the test, they should present the front and back of a blank scratch paper to the camera before the test.
- No other browser or windows besides Canvas opened.
- A workplace that is clear of clutter (i.e., reference materials, notes, textbooks, cellphone, tablets, smart watches, monitors, keyboards, gaming consoles, etc.)
- Well-lit environment. Can see the students' eyes and their whole face. Avoid having backlight from a window or other light source opposite the camera.
- Personal calculators are permitted.

Students must:

- Remain in the testing environment throughout the duration of the test.
- Keep full face, hands, workspace including desk, keyboard, monitor, and scratch paper. Stay in full view of the webcam

Recording Zoom Classes: This course or portions of this course (i.e., lectures, discussions, student presentations) will be recorded for instructional or educational purposes. The recordings will only be shared with students enrolled in the class through Canvas. The recordings will be deleted at the end of the semester. If, however, you would prefer to remain anonymous during these recordings, then please speak with the instructor about possible accommodations (e.g., temporarily turning off identifying information from the Zoom session, including student name and picture, prior to recording).

Students are not allowed to record without instructor permission: Students are prohibited from recording/taking screen captures of all class activities (including class lectures, office hours, advising sessions, etc.), are prohibited of distributing class recordings, or posting class recordings. Materials created by the instructor for the course (syllabi, lectures and lecture notes, presentations, etc.) are copyrighted by the instructor. This university policy (S12-7) is in place to protect the privacy of students in the course, as well as to maintain academic integrity through reducing the instances of cheating. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office. Unauthorized recording may violate university and state law. It is the responsibility of students that require special accommodations or assistive technology due to a disability to notify the instructor.

Classroom Protocol

You are expected to come to every class on time. Class time starts with attendance check (not reflected in your final grade). However, classroom participation and results on the quizzes will be reflected in your final grade. No cell phone, emailing, or text messaging during class. If you need to make a phone call or send an email, or work on anything else that class material please excuse yourself from class or your instructor will ask you to leave the classroom.

University Policies

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy F15-7 requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. Visit the Student Conduct and Ethical Development website for more information.

See here for other campus wide policies <http://www.sjsu.edu/gup/syllabusinfo/>

Grading – Exams

20% weekly Quizzes (about 12 mini-exams, in class, Canvas based and proctored). Quizzes are based on key concepts from either (1) the lecture slides (2) the assigned readings. Quizzes takes a maximum of 10 minutes of class time, and are always proctored using a Lockdown browser, with the student camera ON during class time.

10% online participation. The class will meet 28 times over the semester on Zoom. Each session, students are eligible to earn 2 participation points by asking a question, bringing a comment to the class discussion, or being the “voice” of their working group. The recording of the lecture will be the proof material regarding the fairness of these point distribution. Follow you class participation grade after each lecture and make sure you are rewarded for doing your part.

30% Assignments (Home energy audit): As part of the activities in this class, you will complete 6 graded assignments. Late assignments are ALWAYS accepted following these penalty rules: 1 week after due date of unexcused delay -25%, 2 weeks after due date -50%.

- 1 - Your home energy use – (5 points)
- 2 - Floor plan Assignment – (5 points)
- 3 - Direct Gain Assignment – (5 points)
- 4 - Your home Energy Use Index and Energy Cost Index - (5 points)
- 5 - Your home Energy Audit - (5 points)
- 6 - Your home Energy Conservation Plan - (5 points)

20% Midterm: Both the midterm and the final exams will be open notebook (your personal typed or handwritten notes). The exams will include short answers and essay questions. Your notebook could contain lecture notes and short annotations on the readings, but all will have to be printed out as the exam proctor software will ban access to all of your computer content. You must bring a calculator to the examinations. You will not have access to any electronic devices (other than a calculator and your Zoom locked down computer for proctor). The midterm will include material covered during the first portion of the class. We will include both multiple choice and problems related to the scientific principles of energy, heat, and work. You are encouraged to review the problems sets before the midterm.

20% Final Exam: There will be a comprehensive final exam. Same rules as Midterm exam (see above).

Determination of Grades

The course grade will be determined based on a total 100 possible points. Accumulated points that fall within the grade scale below determine your semester grade.

- A+ 97–100
- A 92–96
- A- 89–91
- B+ 86–88
- B 81–85
- B- 79–80
- C+ 76–78
- C 72–75

C- 69-71
D+ 67-68
D 64-66
D- 60-64
F < 60

Course Schedule

Due to the possibility of changes, always refer to the electronic schedule on Canvas.