

San José State University
College of Social Science, Environmental Studies
23479, Green Building Design Issues, Spring 2016

Instructor: Benoit Delaveau, MS
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Office Hours: Monday 2:00-2:45pm, Tu-Th 9-10am (by appointment only)
Class Days/Time: 3:00-5:45pm, Monday
Classroom: CL 234

Faculty Web Page and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found the [Canvas learning management system](http://sjsu.instructure.com) course website at <http://sjsu.instructure.com>. You are responsible for regularly checking with the messaging system through [MySJSU](http://my.sjsu.edu) at <http://my.sjsu.edu> (or other communication system as indicated by the instructor) to learn of any updates.

Course Description

"The oldest task in human history: to live on a piece of land without spoiling it"
Aldo Leopold 1887-1948

In 1990 global population was 5.2 billion, we expect this number to grow to 10 B by 2100. While humanity must feed, power and host this growing population, the pressure on Earth ecosystems (climate change and resource depletion) is unsustainable. Over the past 20 years, the rise of the Green Building movement has been an attempt to reduce the environmental impact of the building industry.

ENVS137 aims to critically cover the history of this recent environmental movement from its roots (Ancient Chinese cities, Greece and Roman empire) to contemporary California mandatory building code (Cal Green) and the commercial green building certifications (LEED, Energy Star, Green Globes,...).

Learning Outcomes

Upon successful completion of this course, students will be able to:

Describe the basic of "Green" building design: Main principles of building efficiency (orientation, insulation, material, reliance on external fossil energy...). What can we learned from earlier successful societies and cities.

Understand the role of building codes (International, Federal, California CalGreen) and local agencies responsible for it (cities/counties) - 1st assignment: How your own city has adopted or amended CalGreen for residential buildings?

Understand building environmental impacts and the assessment tools (LCA/LCC ISO 14000, check lists, role of professionals involved) - 2nd assignment: Chose a green project in your neighborhood and search for the public documents available, present in class.

Understand the main Green Building certifications and their credit categories: Sustainable sites choice/Energy efficiency - Carbon reduction/Hydrologic cycle - water efficiency/Material choice-product loop/IAQ. - 3rd assignment: Write an essay describing two main green building aspects of your chosen project.

Understand Green Building implementation and lifecycle (operations/maintenance/commissioning/decommissioning) and Green Building Economics - 4th assignment: interview one of the professional/user who was involved in your chosen project about implementation or building real world performance.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

1. Assess official building permit application documents.
2. Assess and decode Green Building certification documents.
3. Apply ISO 14000 LCA/LCC principles to the building environment.
4. Navigate the mandatory and optional processes involved in green building design.

Required Textbooks

Sustainable Construction: Green Building Design and Delivery. By Charles J. Kibert, published by John Wiley & Sons, Inc. 2013. Available on Amazon.com (instant download available on Kindle/Kindle apps).

Life Cycle Assessment. by Kathrina Simonen, Pocket Architecture Technical Design Series published by Routledge Taylor and Francis Group, 2014.

Both are available on Amazon.com (instant download available on Kindle/Kindle apps - hardcopy strongly recommended) as well as at SJSU bookstore

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3) at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

Assignments (40 points): 10 points each - essay/report form.

Keep a project agenda with date/meeting/places. Take pictures when applicable. Polish and type your notes, turn the final document to your instructor for grading. See handout on formatting all your assignments.

Exams (40 points): One mid-term (20 points) and one Final (20 points) - based on lecture content and reading material.

Participation (10 points): Each student will present 2 times in front of the class their project (5 pts. each).

Quizzes (10 points): Each 10 min. quiz will be testing the assigned readings for the day. There will be 5 of them, 2 pts. each.

If you miss a lecture (as any undocumented absence), you'll miss some of the participation points, and the opportunity to get an A+.

Note: I believe in debates, and new ideas. I am hoping that this 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.

University policy F69-24, "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

[University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) at <http://www.sjsu.edu/senate/docs/F69-24.pdf> states, "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Grading Policy

Penalty for late or missed work: 10% deduction for work (project, exams, homework) handed within a week of due date. After, I will accept late assignments with higher penalties. This is for two reasons. One, it is fair to the students that work hard to turn their assignments in on time. Two, late papers create extra work for your instructor. 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 (I'll have to be informed by email the day of the lecture, or the assignment due date), you can still email assignments as attachments.

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See [University Policy F13-1](http://www.sjsu.edu/senate/docs/F13-1.pdf) at <http://www.sjsu.edu/senate/docs/F13-1.pdf> for more details.

Assignments	40% - 4 x 10 points
Quizzes	10% - 5 x 2 points
Midterm and Final Exams	40% - 2 x 20 points
Class Participation / presentations	10% - 2 x 5 points
Total	100%

97% and above	A+
93% - 96%	A
92% - 90%	A-
87% - 89%	B+
83% - 86%	B
80% - 82%	B-
77% - 79%	C+
73% - 76%	C
70% - 72%	C-
67% - 69%	D+
63% - 66%	D
60% - 62%	D-
59-0%	F

University Policies

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. To learn important campus information, view University Policy S90-5 at <http://www.sjsu.edu/senate/docs/S90-5.pdf> and SJSU current semester's [Policies and Procedures, at http://info.sjsu.edu/static/catalog/policies.html](http://info.sjsu.edu/static/catalog/policies.html). In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not address the issue, it is recommended that the student contact the Department Chair as the next step.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.pdf> 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. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make 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](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

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This course calendar is “subject to change with fair notice” and will **ONLY** be updated on Canvas.

2/1 - Lecture #1 - Why do we need to rethink buildings? Early learning in Building design.

Read: Let it Shine, Purlin Chap. 1, 2 and 3 (see files/readings on Canvas)

2/8 - Lecture #2 - Green Building principles foundations. Intro to CalGreen building codes.

Read: Randolph and Master, Chap. 6 on Energy Efficiency for Buildings (see files/readings on Canvas)

Assign. #1 due - How your own city has adopted or amended CalGreen for residential buildings?

2/15 - No Class - Presidents' day

2/22 - Lecture #3 - Assessing GB (part. 1) - LCA/LCC ISO 14000

Read: chapters 1-3 in Simonen, chapters 1-3 in Kibert

Assign. #2 due - Chose a green project in your neighborhood and search for the public documents available at your local building department, present in class. Students presentations

2/29 - Lecture #4 - Assessing GB (part. 2) - LEED v4.0 certification

Read chapters 4 and 5 in Kibert

Students presentations

3/7 - Lecture #5 - Assessing GB (part. 3) - Other certifications

Read: chapter 6 in Kibert and handouts

Students presentations

3/14 - lecture #6 - GB design (part. 1) - Site selection

Read: chapters 7 and 8 in Kibert

Mid-term in class

3/21 - lecture #7 - GB design (part. 2) - Energy + carbon footprint

Read: chapter 9 in Kibert #3

Assign. #3 due - Write an essay describing two main green building aspects of your chosen project.

Students presentations

3/28 - Lecture #8 - GB design (part. 3) - Water cycle

Read: chapter 10 in Kibert

Students presentations

4/4 - Lecture #9 - GB design (part. 4) - Material and product selection

Read: chapters 4-5 in Simonen

Read: chapter 11 in Kibert

Students presentations

4/11 - Lecture #10 - GB design (part. 5) IAQ

Read: chapter 12 in Kibert

Assign. #4 due - interview one of the professional/user who was involved in your chosen project about implementation or building real world performance.

Students presentations

4/18 - Lecture #11 - GB implementation (part. 1) - LEED processes, building phase, commissioning

Read: chapter 13 in Kibert

Students presentations

4/25 - Lecture #12 - GB implementation (part. 2) - Economics

Read: chapter 14 in Kibert

Students presentations

5/2 - Lecture #13 - Green Building future

Read: chapters 6-7 in Simonen

Read: chapter 15 in Kibert

Students presentations

5/ 9 - Lecture #14 - Field Trip (potentially) or guest speaker - Wrap-up.

5/16 - Lecture #15 - Study session, you are done.

Have a great summer break! Final Exam Friday, May 20 12:15-14:30