San José State University
Environmental Studies Department
Green Building Design Issues ENVS 137, Spring 2025

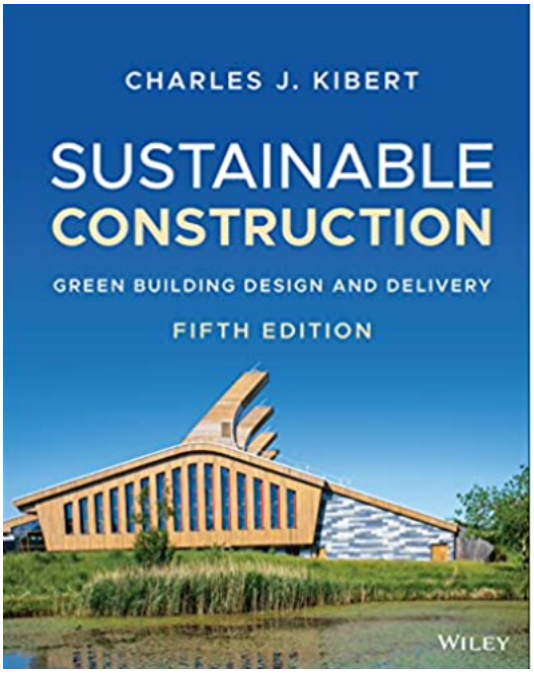
Course and Contact Information

Instructor:	Benoit Delaveau, M.S, CEM, BEAP
Office Location:	WSQ115
Email:	benoit.delaveau@sjsu.edu
Office Hours:	Office Hours: ALWAYS book me on: calendly.com/benoit-delaveau
Class Days/Time:	Monday-Wednesday 1:30-2:45pm in-person DMH 226A

Faculty Web Page and MYSJSU Messaging

You are responsible for checking **daily** with the messaging system through MySJSU and Canvas. Course materials such as the syllabus, 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



"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 the next century. 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,...).

Course Goals
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 Texts/Readings
Sustainable Construction: Green Building Design and Delivery. 4th Edition By Charles J. Kibert, published by John Wiley & Sons, Inc. 2016.

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) as well as at SJSU bookstore.

Library Liaison
Peggy Cabrera, peggy.cabrera@sjsu.edu

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 section at http://info.sjsu.edu/static/catalog/policies.html

Grading: Use the percentages below and your scores to monitor your grade. Real time grade will be available along the semester on Canvas. **Late assignments are ALWAYS accepted following these penalty rules: up to 1 week after due**

date of unexcused delay -25%, after 1 week of due date -50%.

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.) Careful time management will help you keep up with readings and assignments and enable you to succeed in all your classes. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf

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 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 Information – Final Examination

10% Participation: The class will meet 14 times over the semester. Each session, students are eligible to earn 2 participation points (total = 28 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 (if available) 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.

10% weekly Quizzes (about 13 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.

20% Student Presentation. Each student will present two times in front of the class their main project and research (10 points each).

40% Exams: One mid-term (20 points) and one final exams (20 points)
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 should contain lecture notes and short annotations on the readings. If you take notes in the margins of your readings, make sure to transfer important ones to your notebook. You must bring a calculator to the examinations. You will not have access to any online electronic devices (other than a calculator). To study for the tests, you should review the readings, course lecture notes, homework, and learning objectives well in advance of the test date. The midterm will include material covered during the first portion of the class.

20% Your semester project/class assignment (5 points each)
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.
Assign. #1 - How your own city has adopted or amended CalGreen for residential buildings?
Assign. #2 - Chose a green project in your neighborhood and search for the public documents available at your local building department, present in class.
Assign. #3 - Write an essay describing two main green building aspects of your chosen project.
Assign. #4 - Interview one of the professional/user who was involved in your chosen project about implementation or building real world performance. Turn a 2 pages formatted brochure describing your chosen project (template provided)

Determination of Grades

The course grade will be determined based on a total 100 possible points.
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
NO Extra Credit available (given the work load to deal with in this class).
Penalty for late or missed work: -10% of the assignment's grade after 1st week of delay. -20% of the assignment's grade after 2nd week of delay. Not accepted after more than 14 days of delay (grade will be null)

Course Schedule (See Canvas)

This schedule is subject to change with fair notice. If necessary, the electronic schedule available on Canvas will be updated along the semester on a week to week basis.

1/27-29 - Lecture #1 + Quiz #1- Why do we need to rethink buildings? Early learning in Building design. Hommage to Frank Schiavio MML (1939-2010) and his Passive Solar home
Video 1
Video 2
Read: Let it Shine, Purlin Chap. 1, 2 and 3 (see files/readings on Canvas - China, Greece, Rome)

2/3-5 - Lecture #2 + Quiz #2 - Green Building principles and science foundations
Read: Randolph and Master, Chap. 6 Energy Efficiency for Buildings (see files/readings on Canvas).

2/10-12 – Lecture #3 + Quiz #3 - Intro to International and CalGreen building codes.Group Workshop on "sample house and Title 24"
Read: Randolph and Master, Chap. 8 From Whole Building to Whole Community Energy (see files/readings on Canvas).
Assign. #1 due - How your own city has adopted or amended CalGreen for residential buildings?
See guide on format of all your assignments, here.

2/17-19 - Lecture #4 + Quiz #4 - Assessing GB (part. 1) - LCA/LCC ISO 14000 - Group Workshop on 6 LCA Study cases.
Read: chapters 1to 3 in Simonen, chapters 1-3 in Kiber

3/3-5 - Lecture #5 + Quiz #5 - Assessing GB (part. 2) - LEED v4.0 certification -Group Workshop on Student past projects - Final project and assignment #2 explained in class - Choose a LEED certified building that - you think - you will learn everything about.
Read: chapters 4 and 5 in Kibert

3/10-12 - Lecture #6 - Assessing GB (part. 3) - - Alumni discussion in class.
Mid-term in class

3/17-19 - lecture #7 - GB design (part. 1) - LEED + Green Globes Challenge
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 Students presentations in class.

3/24-26 - lecture #8 - GB design (part. 2) - Integrative design + Site Selection
Read:chapter 7 + 8 in Kibert
Students presentations
Spring Break
4/7-9 - Lecture #9 + Quiz #6 - GB design (part. 3) - Energy and Carbon footprints.
Read: chapter 9 in Kibert

4/14-16 - Lecture #10 + Quiz #7 - GB design (part. 4) - Water
Read: chapters 4-5 in Simonen
Read: chapter 10 in Kibert

4/21-23 - Lecture #11 + Quiz #8 - GB design (part. 5) Indoor Air Quality
Read: chapter 12 in Kibert

Assign. #3 due - Project interview. Interview one of the professional/user who was involved in your chosen project about implementation or building real world performance. Find the LEED score card and the Energy performance (EUI) of your project.

4/28-30 - Lecture #12 - GB implementation (part. 1) - LEED processes, building phase, commissioning
Read: Chapter 14 in Kibert (4th edition) - Green building implementation / Construction, operation and commissioning

5/5-7 - Lecture #13 + Quiz #9 - GB implementation (part. 2) - Economics and performance systems.
Read: chapter 15 in Kibert (4th edition) - Green Buildings Economics
Assign. #4 due - Write the intro, and 3 paragraphs of 750 words each describing the most significant "sustainability aspects" of your building. Professional writing required (perfect spelling, punctuation...). Use professional vocabulary (see your textbook and previous students final assignments for guidance). See Files/ Final assignment examples

5/12 Students final presentation
Read: chapters 6 to 7 in Simonen
Read: chapter 16 in Kibert (4th edition) The Cutting Edge of Sustainable Construction
Final project due fully edited and formatted see examples here, additional ones in the folder Files/Final Assignment Examples
Students presentations (end)
Fieldtrip in Burlingame (Prof. Ben Passive House designed Studio) and final exam review

5/15 - Final Exam. Thursday, May 15 1-3:00pm ONLINE and in-person
https://www.sjsu.edu/classes/final-exam-schedule/spring-2025.php