Course name:	Sustainable Energy and Renewable Building Sciences and Technologies
Course number:	Environmental Technology 102
Section number:	7520, 3 units
Instructor	James Lemmon – AIA, LEED AP (BD+C)
E-Mail	jlemmon@elcamino.edu
Prerequisite:	none
Meeting times:	Thursdays, 7 pm to 10:10 pm August 28 through December 11, 2014 (16 weeks)
Location:	El Camino College - Division of Industry Technology, Room TECH 105
Required Text:	*Sustainable Design – A Critical Guide*, by David Bergman, Princeton Press ISBN: 978-1-56898-941-9

The Instructor

James Lemmon has over 23 years experience teaching various architecture courses at colleges throughout Los Angeles and over 21 years professional experience as a practicing architect. Mr. Lemmon is a Senior Project Architect, LEED Accredited Professional and Sustainability Coordinator for several LEED projects throughout California, Hawaii and Guam. He brings valuable 'real-world' experience to the classroom.

Course Description:

This course will cover the basics of sustainable design including the science of climatology, global warming, renewable energy, and the sustainable design of buildings in terms of site selection, water efficiency, passive and active energy efficiency techniques, indoor environmental quality, and sustainable building materials. Green codes and rating systems will be covered including the 2013 CalGreen Code and LEED v4 rating system as well as important "green design" terminology and theories.

Student Learning Outcome (SLO)

By the conclusion of the course, students should be able to:

- Have a basic understanding of how our climate works and the cause and effects of global warming.
- Have a basic understanding of various renewable energy options including solar thermal energy, photovoltaics, bioenergy, hydroelectricity, wind energy and geothermal energy.
- Have a basic understand of the LEED rating and point systems per the US Green Building Council (USGBC).
- Have a basic understanding of sustainable design terminology.
- Design a simple structure using sustainable design techniques learned in this course and write a paper about it.

Classroom Policies

- Students must sign the attendance roster at the beginning of each class. Attendance = 10% of your semester grade.
- Students are responsible for knowing information presented in the lecture slide presentations, reading assignments, and films presented in the class for quizzes and the final examination.
- Students must conduct themselves in a professional manner while in class. The use of loud or profane language or disruptive behavior will result in the student being dropped from the class at the instructor's discretion.
- Students who stop attending class must notify admissions that they want to be dropped from class.

Disability Statement

Students with disabilities should notify the instructor so that accommodations can be provided at their earliest convenience. Students can also contact the *Special Resource Center* on campus at 310-660-3295 to ensure accommodations are implemented in a timely fashion.

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Independent Study

Students are encouraged to join the Los Angeles Chapter of the U.S. Green Building Council (www.usgbc-la.org); participate in various seminars sponsored by them when possible; and explore the USGBC website (www.usgbc.org) to familiarize themselves with the LEED rating systems. Extra credit shall be given to students who provide documentation of participation in sustainable design/green events.

Attendance

Attendance is mandatory is constitutes 10% of your semester grade.

Research Paper

Students will design a small LEED Platinum building and describe the sustainable design features in a research paper. The design will include environmental design techniques and LEED strategies studied in this course. The paper should include drawings of a site plan, floor plans, building sections, elevations and diagrams that convey the sustainable features of the design. The paper shall be 5 written pages minimum, double-spaced, with standard 1" margins. A cover sheet should include the paper's title, the course name and number, and the student's name and the date. All papers are due on **December 4, 2014** and will be graded and returned the following week on the last day of class. Late papers will automatically receive one letter grade off and will not be returned. The research paper is worth 20% of your semester grade.

Quizzes

Seven (7) quizzes worth 5 points each will be given throughout the semester. The lowest quiz grade will be dropped.
The total quiz average will constitute 30% of your semester grade.

Final Examination

A final examination will be given on the last day of class on **December 11, 2014** and will consist of multiple-choice questions that cover material taught throughout the semester. The Final Exam is worth 40% of your semester grade.

Tentative Class Schedule

Week	Date	Lecture Topic	Quiz
Week 1	8/28	Course Overview / Climatology Basics & Global Warming **Film: *An Inconvenient Truth***	
Week 2	9/4	Ecodesign: What and Why **Film: *Houston - we have a problem***	Quiz 1
Week 3	9/11	Site Issues **Film: *Planet in Peril - CNN***	Quiz 2
Week 4	9/18	Water Efficiency **Film: *Revolution Green***	Quiz 3
Week 5	9/25	Energy Efficiency: Passive Techniques **Film: *Building Green - Part I***	
Week 6	10/2	Energy Efficiency: Active Techniques **Film: *Building Green - Part II***	Quiz 4
Week 7	10/9	Indoor Environmental Quality **Film: *Building Green - Part III***	Quiz 5
Week 8	10/16	Materials	Quiz 6
Week 9	10/23	Labels and Rating: Measuring Ecodesign	Quiz 7
Week 10	10/30	Overview of the 2013 CalGreen Code	
Week 11	11/6	Overview of the LEED Rating System	
Week 12	11/13	Overview of the LEED Rating System	
Week 13	11/20	Sustainable Design Terminology - explained	
Week 14	11/27	**Thanksgiving Holiday - no class**	
Week 15	12/4	**Review / Research Papers Due**	
Week 16	12/11	**Final Exam – last day of class**	

Grading

Attendance	=	10%
Research Paper	=	20%
Quizzes (6 quizzes x 5 points each)	=	30%
Final Exam	=	40%
Total	=	100%

Grading Scale

90 - 100	=	A
80 - 89	=	B
70 - 79	=	C
60 - 69	=	D
below 60	=	F