

CEM 162 - Spring 2009 - Section # 60501
SUSTAINABLE BUILDINGS, HOME PERFORMANCE
AND THE ENVIRONMENT

REV 1 05.05.09

Instructor: Steve Murphy	Class Time: Tuesday 6:00-9:10 PM
Office Hrs: Tues 5:30-6:00 & 9:10-9:30PM	Office Location: Classroom (HORT 5005)
Office Ph No. Instructor: (408) 869-8326	
Instructor e-mail address:	stmurphy@cabrillo.edu
Class Website:	http://www.cabrillo.edu/~smurphy/CEM162.html

TEXT: *"Green From the Ground Up: Sustainable, Healthy and Energy-Efficient Home Construction (Builders Guide)"*

By David Johnston and Scott Gibson; published by The Taunton Press, copyright 2008; \$24.95 list price.

ISBN # 978-1-56158-973-9

NOTE: Students are responsible for getting copies of the textbook on-line from Amazon.com or other source; books will NOT be available from the Cabrillo College bookstore.

SUPPORTING TEXTS:

- *"Green Building: Project Planning & Cost Estimating"*
ISBN # 0-87629-659-2; by RS Means
- *"The New Ecological Home- A Complete Guide to Green Building Options";*
ISBN# 1-931498-16-4; Daniel D. Chiras
- *Green Building Guidelines-Meeting the Demand for Low-Energy, Resource-Efficient Homes"*; 5th edition; Sustainable Buildings Industry Council (SBIC)
www.SBICouncil.org

RECOMMENDED TOOLS:

- Calculator
- 3-ring binder for Class notebook

CLASS SCHEDULE

DATE	TOPIC/COURSE ACTIVITIES LECTURES & DISCUSSIONS	HOMEWORK & Reading (NOTE: ASSIGNMENTS DUE AT NEXT CLASS MTG)
Feb 10	<p>Introductions, Course Syllabus/Website, Intro to textbooks/class topics. Class "Notebook" review Class website review http://www.cabrillo.edu/~smurphy/CEM162</p> <p>SMALL GROUP set-up (6-8 people MAXIMUM per group)</p> <p><i>Introduction to Sustainable Construction</i></p>	<p>GET TEXTBOOKS Find article in magazine, newspaper or off internet on "ECONOMIC STIMULUS: Effect on Sustainable Construction". Write a single page summary article (CURRENT EVENT ARTICLE #1) and prepare to discuss at</p>

		next class.
Feb 17	<p>SMALL GROUP DISCUSSION of Current Event Article</p> <p>Textbook Review "SmartMarket Report" Review: McGraw-Hill</p> <p>KEY REGISTRATION NOTES:</p> <ul style="list-style-type: none"> • must be registered for course by Feb 21st • Last day to drop and get full refund- Feb 21st 	<p>ARTICLE REVIEW #1 DUE</p> <p>Read Textbook- Ch 1, 2 and Ch 3 (p 5 - 64) of textbook</p>
Feb 24	<p>Whole building design, site selection, passive solar fundamentals, building envelope components</p>	<p>Same as Feb 17 Also read Ch 7 in textbook STUDY FOR QUIZ</p>
Mar 3	<p>Site selection, passive solar, building envelope components (cont.)</p> <p>QUIZ #1 (text Chapters 1 -3 and 7; class lecture notes)</p> <p>KEY REGISTRATION NOTE: Last day to drop without "W" on record- Mar 7</p>	<p>Review Green Point Checklists for "City of Santa Cruz" and "LEED for Homes" for class discussion</p>
Mar 10	<p>Building/Home "GREEN" Rating Systems:</p> <ul style="list-style-type: none"> • City of Santa Cruz/Build-it-Green Guidelines • LEED for Homes <p>GUEST SPEAKERS: John Ancic & Joe Fullerton/City of Santa Cruz "Green Building Program".</p> <p>KEY REGISTRATION NOTE: Last day to take course CR/NC- Mar 14th</p>	<p>Read Ch 4, 5, 6 and 15 of text.</p> <p>1 page summary of newspaper/periodical article (Current Event Article #2)</p>
Mar 17	<p>SMALL GROUP DISCUSSION</p> <p>Alternative construction methods/framing systems/sustainable building construction materials:</p> <ul style="list-style-type: none"> • Finish materials • Certified wood • VOC's <p>GUEST SPEAKER: Michele Landegger/BOA Construction</p>	<p>ARTICLE REVIEW #2 DUE</p> <p>Read Ch 14 of text.</p> <p>STUDY FOR QUIZ</p>
Mar 24	<p>Indoor Air Quality, moisture control, ventilation systems.</p> <p>QUIZ #2 (text Chapters 4, 5, 6 and 15; class lecture notes)</p>	<p>1 page summary of newspaper/periodical article (Current Event Article #3)</p>
Mar 31	<p>SMALL GROUP DISCUSSION</p>	<p>ARTICLE REVIEW #3 DUE</p>

	Home Performance Contracting <u>GUEST SPEAKER:</u> Mark Van Meter/Van Meter Construction	(NOTE- Article review #3 is EXTRA CREDIT assignment)
Apr 7	California Title 24 Standards/HERS rating guidelines <u>GUEST SPEAKER:</u> Sharon Block/Block Energy Design	
Apr 14	SPRING BREAK	Read Ch 10 of textbook 1 page summary of newspaper/periodical article (Current Event Article #4)
Apr 21	SMALL GROUP DISCUSSION Electrical/lighting systems efficiency, day-lighting, electrical power metering <u>GUEST SPEAKER:</u> Yvonne Ross; Kitchen/Bath Lighting system demo	ARTICLE REVIEW #4 DUE Read Ch 9 of textbook STUDY FOR QUIZ
Apr 28	Building/home heating and cooling systems QUIZ #3 (text Ch 10 and 14; class lecture notes)	Read Ch 8 and 16 of textbook
May 5	Heating/Cooling/Ventilation systems (cont.) Water usage, plumbing fixture efficiency, appliance efficiency KEY REGISTRATION NOTE: Last day to withdraw from course- May 9th	Read Ch 13 of textbook
May 12	Solar Thermal and radiant floor heating systems, Tankless hot water heating systems <u>GUEST SPEAKER:</u> Bill Shady/Pacific Radiant Solar	Small group work on final project 1 page summary of newspaper/periodical article (Current Event Article #5)
May 19	Economic analysis, utility incentive programs for Green Building. QUIZ #4 (text Ch 8, 9, 13 and 16; class lecture notes)	ARTICLE REVIEW #5 DUE Independent group work on presentations.
May 26	Alternative/renewable energy systems, solar	Independent group work on

	<p>photovoltaic systems, "California Solar Initiative." <u>GUEST SPEAKER:</u> Mike Arenson/Arenson Solar</p> <p>Small group work in class.</p>	presentations.
June 2	<p>SMALL GROUP PRESENTATIONS Each SMALL GROUP to present 20 minute MAXIMUM "Sustainability/Green Building" report on residential/light commercial building retrofit.</p>	

EXAMS & GRADES:

Grades are based on the following:

- Attendance/Participation- 5%
- Class Notebooks- 10%
- Current Event Articles- 25%
- Quizzes- 40%
- Final Group Presentation- 20%

If you desire the credit/no-credit option rather than a letter grade, the deadline for doing this is **March 14, 2009**.

CREDIT/NO CREDIT OPTION:

For this option, students shall have to complete the following **MINIMUM** guidelines to receive a CREDIT grade:

- Attendance/participation at 12 out of the 16 class sessions
- Achieve score of 70% or better on class notebook
- Achieve average score of 70% on all quizzes
- Achieve score of 70% on final class project
- Makeup assignments can be turned in for "extra credit" to offset deficiencies in any of the above 4 grading categories.

EXTRA CREDIT OPPORTUNITIES:

Students can earn extra points by completing the following work:

1. Additional "**Current Event**" articles
2. Independent Field Trips to Sustainable Construction project of your choice. Students are required to have photograph taken of them at the site and to turn in a "**Top 10 List**" of sustainable construction attributes of the site.

STUDENTS WITH DISABILITIES:

I encourage students with disabilities to explain their individual needs to me during office hours (listed above). Please bring verification of your disability (from the Learning Skills or DSP&S office and counselor and/or specialist's recommendations) so that I may assist you in accommodating your needs.