SUSTAINABLE BUILDINGS, HOME PERFORMANCE 
AND THE ENVIRONMENT

Instructor: Steve Murphy 
Class Time: Monday 6:00-9:10 PM
Office Hrs: Monday 5:30-6:00 & 9:10-9:30PM 
Office Location: Classroom (HORT 5005) 
Instructor Office Ph#: (408) 869-8326 
Instructor e-mail address: stmurphy@cabrillo.edu 
Class Website: http://www.cabrillo.edu/~smurphy/CEM162.html

SUGGESTED 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

LEARNING OUTCOMES:
1. Analyze renewable and alternative energy and building resources.
2. Critically assess active and passive solar energy collection systems, site evaluation, 
design analysis of various systems, codes, U.S. Green Building Council: Leadership in 
Energy and Environmental Design (LEED), green building and materials and methods 
of construction.
3. Investigate various renewable energy technologies and their relationship with energy 
conservation, scarce resources and the environment.
4. Compare and contrast the myriad number of alternative energy sources and 
applications.

RECOMMENDED TOOLS:
• Internet access for course materials
• Calculator
• 3-ring binder for Class “Notebook”

CLASS SCHEDULE

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC/COURSE ACTIVITIES LECTURES &amp; DISCUSSIONS</th>
<th>HOMEWORK</th>
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<tbody>
<tr>
<td>Feb 11</td>
<td>Introductions, Course Syllabus/Website Class “Notebook” review Class website review <a href="http://www.cabrillo.edu/~smurphy/CEM162.html">http://www.cabrillo.edu/~smurphy/CEM162.html</a></td>
<td>Find article in magazine, newspaper or off internet on “Sustainable Construction”. Write a single page critique of the article (CURRENT EVENT ARTICLE #1) to turn-in and also discuss at next class. Summary should express your opinion of the</td>
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<tr>
<td>Date</td>
<td>Event/Assignment</td>
<td>Notes</td>
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<td>Feb 18</td>
<td><strong>SCHOOL HOLIDAY - no class!</strong></td>
<td><strong>KEY REGISTRATION NOTES:</strong> Must be registered for course by Feb 23rd. Last day to drop and get full refund - Feb 23rd. Last day to drop without “W” on record - Feb 24th.</td>
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<tr>
<td>Feb 25</td>
<td><strong>SMALL GROUP DISCUSSION</strong> of Current Event Article #1</td>
<td><strong>ARTICLE REVIEW #1 DUE</strong></td>
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<td></td>
<td><strong>Introduction to Sustainable Construction</strong></td>
<td>See website on window selection</td>
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<td><a href="http://www.efficientwindows.org">www.efficientwindows.org</a></td>
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| Mar 4  | **Whole building design**, site selection, passive solar fundamentals, building envelope components:  
          - Heat transfer  
          - R-values of building materials  
          - Window properties  
          **Sustainable Building materials/alternate construction methods:**  
          - Framing  
          - Finish materials  
          - Certified wood  
          - VOC’s | **1 page summary of newspaper/periodical article (Current Event Article #2)**  
          Review CALGreen Companion Guides”.  
          **STUDY FOR QUIZ**                                                                 |
| Mar 11 | **SMALL GROUP DISCUSSION**                                                       | **ARTICLE REVIEW #2 DUE**                                             |
|        | Energy Upgrade California  
        | CALGreen overview                                                              | Review LOCAL Energy Upgrade California website   
        |                                                                                 | [www.ecoact.org/Programs/Climate/EUC/index.html](http://www.ecoact.org/Programs/Climate/EUC/index.html)  
        | **QUIZ #1 (class lecture notes, website material and Current Event article discussions)** | Review Green Construction Checklists for “LEED V3/2009”  
        |                                                                                 | **KEY REGISTRATION NOTE:** Last day to take course P/NP - Mar 16th. |
| Mar 18 | **Building/Home “GREEN” Rating Systems:**  
          - CALGreen- RESIDENTIAL  
          - CALGreen- NON RESIDENTIAL  
          - LEED V3- BD&C; EBOM | **STUDY FOR QUIZ**  
          Review Build-It-Green “GreenPoint Rated” checklists   
          [www.builditgreen.org](http://www.builditgreen.org) |
<p>| Mar 25 | <strong>Build-It Green/GreenPoint Rated</strong>                                               |                                                                      |</p>
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<tr>
<th>Date</th>
<th>Event</th>
<th>Notes</th>
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<tbody>
<tr>
<td>April 1</td>
<td>SPRING BREAK- no Class!</td>
<td>1 page summary of newspaper/periodical article (Current Event Article #3)</td>
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<td>Apr 8</td>
<td>SMALL GROUP DISCUSSION</td>
<td>ARTICLE REVIEW #3 DUE</td>
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<td>MIDTERM REVIEW</td>
<td>Study/get organized for MIDTERM</td>
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<td>Apr 15</td>
<td>MIDTERM</td>
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<td>Apr 22</td>
<td>Sustainable Home Construction CASE STUDY</td>
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<td>GUEST SPEAKER: Randy Potter/EarthBound Homes</td>
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<td></td>
<td>MIDTERM REVIEW</td>
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<td>FINAL PROJECT REVIEW</td>
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<td>Apr 29</td>
<td>5 PM ELECTRIC VEHICLE DEMO</td>
<td>STUDY FOR QUIZ</td>
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<td>Rick Corcoran</td>
<td>1 page summary of newspaper/periodical article (Current Event Article #4)</td>
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<td>GUEST SPEAKER: “Building Science”</td>
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<td>Mark Van Meter/Van Meter Construction</td>
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<td>May 6</td>
<td>SMALL GROUP DISCUSSION</td>
<td>ARTICLE REVIEW #4 DUE</td>
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<td>Water usage, plumbing fixture efficiency, appliance efficiency, tankless water heaters</td>
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<td>Solar Thermal and radiant floor heating systems,</td>
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<td>QUIZ #3 (class lecture notes, website material and Current Event article discussions)</td>
<td>KEY REGISTRATION NOTE: Last day to withdraw from course- May 11th</td>
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<tr>
<td>May 13</td>
<td>Building/home heating and cooling systems</td>
<td>Small group work on final</td>
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Electrical/lighting systems efficiency, daylighting, electrical power metering

1 page summary of newspaper/periodical article (Current Event Article #4)

**May 20**

Economic analysis, utility incentive programs for Green Building.

QUIZ #4 (class lecture notes, website material and Current Event article discussions)

**ARTICLE REVIEW #5 DUE**

Small group work on presentations

**May 27**

SCHOOL HOLIDAY- NO CLASS!

Small group work on presentations.

**June 3**

SMALL GROUP PRESENTATIONS

Each SMALL GROUP to present 25 minute MAXIMUM “Sustainability/Green Building” report on residential/light commercial building retrofit.

EXAMS & GRADES:

Grades are based on the following:

- Participation- 10%
- Class Notebooks- 10%
- Current Event Articles- 20%
- Quizzes/MIDTERM 40%
- Final Project/Presentation- 20%

If you desire the pass/no-pass option rather than a letter grade, the deadline for doing this is March 16th, 2013.

PASS/NO PASS OPTION:

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

- Attendance/participation at 12 out of the 16 class sessions
- Turn in 3 out of 5 Current Event Articles
- Achieve score of 70% or better on class notebook
- Achieve average score of 70% on all quizzes/midterm
- 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. “Top 10 List” should include a few paragraphs about why this building sustainable feature made the list; list should be ranked in order of priority that YOU would recommend implementing on other projects.

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.