Course Objectives

To provide the student with an introduction to building construction as it relates to firefighter and life safety. Course will cover building construction terms, types, fire protection features, codes and prevention characteristics of various buildings. Text: Knowing Your Buildings: A Firefighter’s Reference Guide by Craig Schwinge (Delmar/Cengage 2010).

Student Learning Objectives

1. Critically assess various roof systems for defects.
2. Analyze roof systems for collapse potential during fire impingement.
3. Critically assess the relationship between building construction elements and the fire resistive characteristics of various materials.

Students needing accommodations should contact the instructor ASAP. As required by the Americans with Disabilities Act (ADA), accommodations are provided to insure equal opportunity for students with verified disabilities. If you need assistance with an accommodation, please contact Disabled Student Services, Room 810, (479-6379) or Learning Skills Program, Room 1073, (479-6220).

Attendance/Participation: This course requires active participation each day of class so it is important for you to attend every class session, arrive on time, and come prepared. Your participation not only enhances your own learning, it benefits other students in the class, especially when the class is doing group work. Your level of participation is reflected in your grade and since you can’t participate if you are not in class, absences will also be reflected in your grade. Students deciding not to attend are responsible for completing drop procedures.

Important Dates:

Semester Dates: January 27 – May 24
Holidays: Lincoln Holiday February 24, Presidents Holiday February 17; Spring Break March 31 – April 5; Memorial Day May 26
Last day to add or drop (with a refund) full term classes: February 8
Last day for students to withdraw without a “W” (full term course): February 9
Withdrawal deadline with a “W” (full term course): May 11
Deadline for pass/no pass option: March 1
Finals Week: May 19 - 24

Grading Schedule

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Handouts at 10 points each</td>
<td>120 points</td>
</tr>
<tr>
<td>3 Exams at 80 points each</td>
<td>240 points</td>
</tr>
<tr>
<td>Building Project Report</td>
<td>80 points</td>
</tr>
<tr>
<td>NIOSH or Near Miss Report</td>
<td>40 points</td>
</tr>
</tbody>
</table>

480 points total

No make-up exams without prior approval. Late handouts and reports will receive one-half credit. All written work is to be typed and well organized. Syllabus and handout worksheets available at my Cabrillo website: http://www.cabrillo.edu/~cschwinge/

See instructor for extra credit opportunities.

Cabrillo College
Instructor: Craig Schwinge
SYLLABUS SPRING 2014

Students are to print out worksheet handouts (12) before class on Monday which are to be completed and turned in Wednesdays at the end of class.  (http://www.cabrillo.edu/~cschwinge/).  Additional homework reading will be required for some weeks.

The text chapter, “Construction Essentials for Structural Firefighting Success” will be referred to frequently throughout the semester and requires re-reading.  See the above link to view powerpoints from that chapter and other building construction related information.  The three (3) exams will include vocabulary (see Assignment below) as well as material from the handout worksheets and class discussions.

<table>
<thead>
<tr>
<th>DATE</th>
<th>SESSION</th>
<th>TOPIC</th>
<th>ASSIGNMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/28 &amp; 1/30</td>
<td>1</td>
<td>Introductions, course outline review</td>
<td>Study “A” through “H”</td>
</tr>
<tr>
<td>2/4 &amp; 2/6</td>
<td>2</td>
<td>Codes, Prevention, Resistance, Occupancy</td>
<td>Study “A” through “H”</td>
</tr>
<tr>
<td>2/11 &amp; 2/13</td>
<td>3</td>
<td>Building Types</td>
<td>Study “A” through “H”</td>
</tr>
<tr>
<td>2/18 &amp; 2/20</td>
<td>4</td>
<td>Forces, Stresses, Loads and Failure</td>
<td>Study “A” through “H”</td>
</tr>
<tr>
<td>2/25 &amp; 2/27</td>
<td>5</td>
<td>Monday EXAM #1; Wednesday - Structural Components and Connections</td>
<td>Study “I” through “M”</td>
</tr>
<tr>
<td>3/4 &amp; 3/6</td>
<td>6</td>
<td>Materials</td>
<td>Study “I” through “M”</td>
</tr>
<tr>
<td>3/11 &amp; 3/13</td>
<td>7</td>
<td>Roofs</td>
<td>Study “I” through “M”</td>
</tr>
<tr>
<td>3/18 &amp; 3/20</td>
<td>8</td>
<td>Floors</td>
<td>Study “I” through “M”</td>
</tr>
<tr>
<td>3/25 &amp; 3/27</td>
<td>9</td>
<td>Walls</td>
<td>Prepare for EXAM #2</td>
</tr>
<tr>
<td>4/1 &amp; 4/3</td>
<td>10</td>
<td>Spring Break</td>
<td>Complete NIOSH Report</td>
</tr>
<tr>
<td>4/8 &amp; 4/10</td>
<td>11</td>
<td>Monday EXAM #2; Wednesday NIOSH/NM REPORTS</td>
<td>Study “N” through “Z”</td>
</tr>
<tr>
<td>4/15 &amp; 4/17</td>
<td>12</td>
<td>Hazardous Building Features and Conditions</td>
<td>Study “N” through “Z”</td>
</tr>
<tr>
<td>4/22 &amp; 4/24</td>
<td>13</td>
<td>Hazardous Building Features and Conditions</td>
<td>Study “N” through “Z”</td>
</tr>
<tr>
<td>4/29 &amp; 4/30</td>
<td>14</td>
<td>Failure Indicators and Causes</td>
<td>Study “N” through “Z”</td>
</tr>
<tr>
<td>5/13 &amp; 5/215</td>
<td>16</td>
<td>BUILDING PROJECT REPORTS</td>
<td>Prepare for EXAM #3</td>
</tr>
<tr>
<td>5/22</td>
<td>17</td>
<td>Wednesday EXAM #3 0800 - 0950</td>
<td></td>
</tr>
</tbody>
</table>
BUILDING PROJECT REPORT

Provide a photograph and prepare a type-written report on each of the following buildings:
1. Wood frame
2. Concrete or masonry wall bearing building
3. Steel frame

For each building provide the following as applicable:
A. Building information (building name if applicable)
   1. Address
   2. Age (best estimate)
   3. Size (best estimate) and number of floors
   4. Type (if able to determine)
   5. Occupancy code
   6. Number and type of exits
   7. Fire protection systems (sprinklers, detectors, alarm panel, etc)
B. Description of construction features/elements
   1. Frame/wall bearing material and sizes (structural elements for walls, floors, roof).
      Give approximate sizes of joists, rafters, trusses, studs.
   2. Exterior wall coverings/surfaces
   3. Interior wall coverings/surfaces
   4. Floors and ceilings frame materials and coverings
   5. Roof (flat, pitched or curved); roof deck material and exterior covering
C. Firefighting hazards
   1. Construction features (concealed void spaces, trusses, unprotected structural elements, light weight construction features/materials, URM, tilt-up, flame spread issues, etc).
   2. Fire loading (contents, products, hazardous materials, etc)
   3. Life safety concerns (rescue potential, elderly, infirm, etc)
   4. Fire and smoke spread characteristics (voids, non fire-stopped attic spaces, open hallways, large open areas, etc)
   5. Failure/collapse potential (age, condition, connections, lack of fire protection systems, construction elements/features, etc)

Due date May 13, 2014.

NIOSH LINE OF DUTY DEATH OR FIREFIGHTER NEAR MISS REPORT

Prepare a type-written, three-page (minimum) report on a line of duty death or near miss due to a failure of a building construction element (www.cdc.gov/niosh/fire/) or (www.firefighternearmiss.com/). Describe and discuss hazardous building features, fire conditions or warning signs, if any, that could have alerted firefighters prior to the event. Cite the source of your information and provide the date and location of the LODD or near miss.
Due date April 10, 2014.

Useful websites and additional information:
http://www.everyonegoeshome.com/partners/fsculture_p1.html
http://www.fire.gov/FFTG/index.htm
http://www.cdc.gov/niosh/fire/
http://www.cdc.gov/niosh/docs/2009-100/
http://www.cdc.gov/niosh/fire/othpubs.html
http://www.cdc.gov/niosh/fire/quizinstr.html
http://www.fire.nist.gov/
http://www.everyonegoeshome.com/resources/
http://www.everyonegoeshome.com/media/
http://www.fireserviceslt.com/index.html
http://www.firefighternearmiss.com/
http://www.firefighterclosecalls.com/home.php
http://www.usfa.dhs.gov/index.shtm
http://wtc.nist.gov/

CABRILLO COLLEGE              FT 4 BUILDING CONSTRUCTION FOR FIRE PROTECTION
Instructor Craig Schwinge