

## **CME 342 - Light Construction**

3 Credits (3 Lecture Hours)

**Lecture** – Meets in 212 Marshall Hall, Tuesdays and Thursdays 8:00-9:20AM

**Instructor** – Paul Crovella

219 Baker Laboratory

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Office hours – M,W,F 10:30-11:30, T,R 9:30 – 10:30

Graduate Assistant – Sean Woods [srwoods@syr.edu](mailto:srwoods@syr.edu)

**Text** – Fundamentals of Residential Construction by Edward Allen and Rob Thallon, 2<sup>nd</sup> edition, published by John Wiley and Sons, Inc.

**Description** - This course is designed to help the student to understand the construction process in general and appreciate the unique aspects of light construction. The course will provide a foundation for the students' understanding of material properties, building science, structural design, estimating, scheduling, and overall project management.

The student will be expected to develop skills which help them succeed in construction management: Effective communication, Efficient problem solving, Exemplary cooperation,

**Student outcomes:**

1. The student will demonstrate the ability to meet the regulatory demands for construction permitting, and work with construction documents.
2. The student will differentiate between different solid and engineered wood products and select appropriate materials for light construction applications.
3. The student will estimate the materials needed for various aspects of the construction process.
4. The student will develop schedules for sub-assemblies used in the construction process.
5. The student will determine code required methods for designing floor, wall and roof assemblies.
6. The student will evaluate various light construction systems on the basis of building science principles.
7. The student will work cooperatively to meet expectations for managing construction projects.

**Attendance** - Students are expected to attend all scheduled classes and laboratories. If special circumstances such as illness, religious holidays, travel difficulties, family emergencies or active participation in college-sponsored events make absence unavoidable you must see me to make up the work. No student will be allowed to complete graded work after that work has been returned to others in the class.

While in class, please keep cell phones turned off, this includes during tests (no cell phone calculators).

To maintain the proper classroom environment, laptop computers may not be used during lecture without permission of the instructor. They should be used during class for taking notes not for games or watching videos.

**Academic Honesty** – Honesty and integrity are the foundation of professional behavior and are expected of each student. Any assignment (including those in electronic media) submitted by a student must be of the student's original authorship. Representation of another's work as the student's own shall constitute plagiarism. Cheating, in any form, is an unacceptable behavior within all college courses, and the Code of Student Conduct (as outlined in the ESF student handbook <http://www.esf.edu/students/handbook/0910StHandbk.pdf> ) will be strictly adhered to.

**Grading** – The course grading will be a combination of grades earned on homework, quizzes, tests, group project work, class presentation, and the final exam.

The final grade will be based on these percentages

Homework	20%
Quizzes	20%
Labs	10%
Group project	10%
Class Participation	10%
Class presentation	10%
Final Exam	20%

**Homework** - All written work must be word-processed and spell checked. Any calculations may be hand-written neatly with the answer labeled with units and boxed. Any homework not turned in on-time needs to be discussed with me to determine if credit will be given. No late homework will be accepted after the assignment has been graded and returned to the rest of the class.

**Quizzes** – Will be both announced and unannounced.

**Course Outline:**

<p><b>Week 1</b> Aug 31 Sept 2</p>	<p><b>Course Introduction: Housing in America-</b> August 31<sup>st</sup> class survey</p> <p>Homework for September 2<sup>nd</sup> – Personal Introduction</p> <p><b>Design process</b> Comparison of class survey results</p> <p>Homework for September 9<sup>th</sup> – Census data work</p> <p><i>Text reading - Chapter 1</i></p>
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<p><b>Week 2</b> Sept 7</p>	<p><b>Financial planning, Site Development, Permitting, Plan reading</b></p>
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Sept 9	<p>Homework - Print Reading</p> <p>Group Project Part I</p> <p><i>Text reading - Chapter 2,3</i></p>
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<b>Week 3</b>	<b>Wood Construction Materials – Solid Wood Properties</b>
Sept 14	Homework - Board Foot Calculations
Sept 16	<i>Text reading - Chapter 4</i>

<b>Week 4</b>	<b>Wood Construction Materials-Engineered Wood &amp; Structural Composite Lumber</b>
Sept 21	Group Project Part II
Sept 23	<i>Text reading - Chapter 4</i>

<b>Week 5</b>	<b>Structural Design</b> Load paths, Tributary loads, uniform and point loads
Sept 28	Homework - Load Calculation
Sept 30	<a href="http://www.apawood.org/pdfs/managed/Z416.pdf?CFID=659346&amp;CFTOKEN=94927092">http://www.apawood.org/pdfs/managed/Z416.pdf?CFID=659346&amp;CFTOKEN=94927092</a> – Built up beam design shows calculations of tributary areas.

<b>Week 6</b>	<b>Foundations</b>
Oct 5	
Oct 7	<i>Text reading - Chapters 7,8</i>

<b>Week 7</b>	<b>Floor framing</b>
Oct 12	Floor framing group project – Model Making
Oct 14	Homework - Floor frame estimating, Floor frame code
	<i>Text reading - Chapter 9</i>

<b>Week 8</b>	<b>Wall Structure</b>
Oct 19	Homework - Wall code
Oct 21	<i>Text reading - Chapter 9</i>

<b>Week 9</b> Oct 26 Oct 28	<b>Wall Structure</b> Homework - Wall Frame estimating <i>Text reading – Chapter 9</i>
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<b>Week 10</b> Nov 2 Nov 4	<b>Ceiling &amp; Roof Structure –</b> Homework – Sectional view of house <i>Text reading - Chapter 10</i>
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<b>Week 11</b> Nov 9 Nov 11	<b>Building Science</b> Homework - Building Science <i>Text Reading– Chapter 17</i>
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<b>Week 12</b> Nov 16 Nov 18	<b>Building Science</b> Homework – Proper Detailing <i>Text Reading– Chapter 17</i>
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<b>Week 13</b> Nov 23	<b>Building Science</b> Rescheck exercise No class –November 25 <sup>th</sup> - Thanksgiving
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<b>Week 14</b> Nov 30 Dec 2	<b>Alternative Construction Methods</b> Class presentations
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<b>Week 15</b> Dec 7 Dec 9	<b>Alternative Construction Methods</b> Class presentations
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Class 1 – Form groups, take survey, don't let students leave until they know the names of everyone in their group.