A. GENERAL
1. Course: Architecture 213b, 3 units
2. Title: Structure Systems and Seismic Design
3. Class meetings: Two 1.5 hour lectures and one 1 hour lab per week
4. Examinations: Quizzes, Midterm and Final Exam
5. Student hours: 9 hours per week, including class and lab time

B. OBJECTIVES
Develop understanding of building structures and selection criteria for appropriate systems; integration of structures with architectural objectives; conceptual design of structures for gravity and lateral wind and seismic loads.
Handouts and homework are posted at http://www.usc.edu/structures bring handouts to class

C. SUBJECT MATTER
Structural systems to resist gravity and lateral loads. Integration architectural and structural objectives for synergy of form and structure. Selection of systems for diverse objectives. Potential of structures to define space, serve as ordering system, provide texture and tectonics.

The USC School of Architecture’s five year BARCH degree and the two year M.ARCH degree are accredited professional architectural degree programs. All students can access and review the NAAB Conditions of Accreditation (including the Student Performance Criteria) on the NAAB Website: http://www.naab.org/accreditation/2004_Conditions.aspx

D. ASSIGNMENTS
Readings, homework, quizzes, term projects, Mid Term and Final Exam.

E. BASIS FOR COURSE GRADE

<table>
<thead>
<tr>
<th>Subject</th>
<th>percentage of grade</th>
<th>Grading scale:</th>
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</thead>
<tbody>
<tr>
<td>Term projects</td>
<td>~25%</td>
<td>A = 90 -100%</td>
</tr>
<tr>
<td>Homework, exercise, etc.</td>
<td>~25%</td>
<td>B = 80 - 89%</td>
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<tr>
<td>Mid Term</td>
<td>~25%</td>
<td>C = 70 - 79%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>~25%</td>
<td>D = 60 - 69%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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To pass the course students must pass the Final and miss not more then two classes

Statement for Students with Disabilities. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DPS is located in STU 301 and is open 8:30AM-5PM, Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement on Academic Integrity. USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://www.usc.edu/dept/publications/SCAMPUS/gov/ Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/


Resource books
- Schierle (1968) Lightweight Tension Structures, UCB
- Schierle (1970) Prestressed Trusses (USC ARCH library)
- Schueller (1983) Horizontal Span Structures, Wiley
G. COURSE OUTLINE

JANUARY
Tu 14  Introduction: synergy of form and structure
  Term Project issued
Th 16  Selection of structure systems
Tu 21  Horizontal structures introduction
Th 23  Design of tensile structures
Tu 28  Design of suspended structures
Th 30  Design of arch and vault structures

FEBRUARY
Tu 4   Fabric structure design
Th 6   Joist beam and frame structure design
Tu 11  Truss structure design
Th 13  Cable truss design
Tu 18  Stayed structure design
Th 20  Vierendeel structure design
Tu 25  Shell structure design
Th 27  Folded plates and cylindrical shell design

MARCH
Tu 4   Wood structures
Th 6   Term project review, 12:30 – 4:20 pm
Tu 11  Foundation design
Th 13  Midterm review
17-22  SPRING BREAK
Tu 25  Introduction of vertical/lateral structures
Th 27  Midterm Exam

APRIL
Tu 1   Portal Method Introduction
Th 3   Moment frame design
Tu 8   Braced frame design
Th 10  Framed tube design
Tu 15  Suspended high-rise design
Th 17  Shear wall design
Tu 22  SDG: Structure Design Graph introduced
Th 24  Seismic design
Tu 29  Design for wind

May
Th 1   Final review
We 14  Final Exam, 2 to 4 pm, Harris 101