

**CLASS SYLLABUS – FALL 2017**

**A. General Information**

Course:	<b>ARCH-511: BUILDING SYSTEMS</b>
Units:	4 Units
Instructor:	Christine M Lampert, AIA, NCARB
Instructors email:	christinelampert@gmail.com
Office hours:	By appointment
Class day and time:	Monday from 6:30pm to 9:40pm
Location:	RTH 109

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**B. Course Description**

The course focuses on the studies of construction system development within the architectural design context; processes and issues of selection, evaluation, optimization, integration, design control, and innovation. Department approval required.

**C. Learning Objectives**

During the course, students will learn the following:

1. Technical Documentation: Ability to make technically clear drawings for communicating designs and details, write outline specifications, and prepare models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
2. Site Design: Ability to respond to site characteristics such as soil, topography, vegetation and watershed in the development of a project design.
3. Financial considerations: Understanding of the financial implications of building components and building systems.
4. Building Envelope Systems: Understanding of the basic principles involved in the appropriate application of building systems and associated assemblies relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.
5. Building Materials and Assemblies: Understanding of the basic principles utilized in the appropriate selection of construction materials, products, components, and assemblies based on their inherent characteristics and performance, including their environmental impact and reuse.
6. Building Service Systems: Understanding of the basic principles and appropriate application and performance of building service systems such as plumbing, electrical, vertical transportation, security and fire protection systems.

**D. Purpose**

1. After this course students are expected to be able to contribute in the design and development of architectural and structural systems in an Architectural / Engineering firm or in a Design / Build firm.

**E. Course Notes and Requirements**

1. Students will be required to attend all lectures, complete all reading assignments, quizzes, drawings relating to each weeks lectures and discussions, job site visits, architectural models and projects. See attached course outline for additional details.

2. Students will be expected to perform as if they are an employee of an architecture / engineering design firm and will participate in classroom discussions and will communicate with their classmates as if in an office setting where working as a team is always expected. Each student will be responsible for their own projects and portfolio but will be expected to enhance their decision making through team communication.
3. Absences can be excused with prior approval in writing via email. Two absences will result in a reduction of the final class grade.
4. All electronic devices shall be turned to silent mode during class and texting and phone calls are not appropriate.

#### **F. Course Outline**

1. The course outline is attached to this syllabus.
2. The course outline includes a schedule of assignments and events for the class.
3. The course outline will change during the semester due to scheduling conflicts and accommodation of speakers schedules.
4. The footer on the course outline shows revision dates. As the revisions happen, updates will be posted.

#### **G. Reading Assignments**

1. Reading assignments are listed in the Course Outline and the list of text books can be found in the bibliography listed in section N.
2. It is important to read the assigned material the week that it is assigned in order to participate in the discussions, assignments and quizzes.

#### **H. Assignments: Will Count for 20% of the Final Grade**

1. Assignments are listed in the attached course outline. Additional information will be provided at the time of the assignment start date.
2. The goal of the assignments is to provide practical experience in design details, construction project management, materials methodology, etc. based on the course learning objectives described in section C.
3. The method of turning in assignments will be discussed for each assignment. The goal is to turn in most assignments digitally using scanning and in some cases the assignment will be physically turned in
4. Late assignments will receive partial credit based on the time they are turned in.

#### **I. Quizzes: Will Count for 30% of the Final Grade**

1. Quizzes will be given throughout the semester per the attached course outline.
2. Quizzes will be based on the reading assignments and the lectures and will typically be 20 to 30 questions. The questions will be a combination of multiple choice, short essays and sketching of details.
3. Quizzes cannot be made up.

#### **J. Field Trip: Will Count for 15% of the Final Grade**

1. Field trips will be arranged during the semester to observe various phases of construction and to understand the process of construction as well as the methods of documenting the observation and management of the construction process.
2. Construction Site visits will be scheduled outside of class time, preferably on Saturday mornings. Every effort will be made to work with the schedules of each class member.
3. The field trip schedule will be estimated in the class outline but may change.

### **K. The Final Project: Will Count for 25% of the Final Grade**

1. The final project will reflect the compilation of the semester's studies. Each student will be asked to choose an existing building in Southern California which fits the described criteria. The project will be the complete analysis and documentation of the building's structure, the materials and methods of construction and all of the systems including mechanical, electrical and plumbing as well as other disciplines that pertain to the particular building which may include civil engineering and topography, landscape architecture, special soil conditions. Students will be asked to research the building department records as well as observing the building. Students will also be asked to do an analysis of how the building might be performing from an energy savings standpoint as well as sustainability with suggestions as to how the building might be retrofitted to perform better..
2. The final project will be presented with sketches and drawings, photos, analysis of research, charts and graphs, etc. The goal is to provide a full understanding of how the building functions and how it was constructed.
3. Each student will make a presentation to the class and will submit a bound set as well as a digital copy of their project for grading.

### **L. Portfolio Review: Will count for 10% of the Final Grade**

1. Each student will prepare and submit a portfolio of all the semester's class work neatly organized in a binder. The binder will be presented to the instructor for a private review but will not be turned in.
2. Students will also be required to submit their portfolio work in a PDF format on a CD or DVD.
3. All work from the entire semester must be in the portfolio and missing work will result in a lower grade even if the work has been previously graded.

### **M. Grading**

The grading breakdown is by percentage of total points.

<b>A</b>	100 - 90%	Work exceeds expectations, student always attends class.
<b>B</b>	80 - 89%	Very good work, almost always attends class.
<b>C</b>	70 - 79%	Good work, good attendance
<b>D</b>	60 - 69%	Late, incomplete or sloppy work, infrequent attendance
<b>F</b>	59% or less	Missing or poor work, poor attendance.

### **N. Bibliography**

#### **Required Texts:**

1. Fundamentals of Building Construction Materials and Methods, by Edward Allen and Joseph Iano - fifth edition
2. Mechanical and Electrical Systems in Buildings, by Richard Janis and William K.Y. Tao - fifth edition

#### **Recommended Texts:**

1. Building Construction Illustrated,
2. Architectural Graphic Standards,

**Referenced / Recommended Texts:**

1. CBC-2010 (California Building Code)
2. ASCE 7-05 (Minimum Design Loads for Buildings and Other Structures)
3. AISC 13th Edition (Steel Structures)
4. NDS-05 (Wood Structures)
5. ACI 318-08 (Concrete Structures)
6. TMS 402/602-08 (Masonry Structures)
7. Ambrose / Vergun (1999) (Design for Earthquakes)
8. City of LA, Type V Construction
9. G.G. Schierle, PhD, FAIA (2008) Structures and Design

**O. Suggested Computer Software ( But not required )**

1. AutoCAD / Revit or similar software
2. SketchUp or similar
3. Adobe Creative Suite (Photoshop, Illustrator, In-Design, Acrobat, etc.) or similar

**P. Additional Information****1. Statement for Students with Disabilities**

Any student requesting academic accommodations based on a disability is required to register with the Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please make sure that the letter is delivered to the instructor as early in the semester as possible.

DSP is located in STU 301 and is open 8:30am to 5:00pm Monday through Friday. The phone number for DSP is (213) 740 0776.

**2. 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/>.

**3. Academic Conduct**

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University*

*Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally

unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>. Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage [sarc@usc.edu](mailto:sarc@usc.edu) describes reporting options and other resources.

#### 4. Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* [http://sait.usc.edu/academicsupport/centerprograms/dsp/home\\_index.html](http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

#### **Q. Course Schedule: A Weekly Breakdown**

1. A class schedule broken down into weekly assignments will be provided attached to this syllabus. The first installment will be included and updates will be provided as schedules are confirmed.
2. For each unit of in-class contact time, the university expects two hours of out of class student work per week over a semester.
3. Weekly breakdown of reading and assignments to follow and will be updated on a regular basis as needed.

#### **SEE ATTACHMENT FOR MORE SPECIFIC INFORMATION**

	Topics/Daily Activities	Readings and Homework	Deliverable/ Due Dates
<b>Week 1</b> Aug21			
<b>Week 2</b> Aug28			
<b>Week 3</b> Sep4	<b>HOLIDAY - NO CLASS</b>		
<b>Week 4</b> Sep11			

<b>Week 5</b> Sep18			
<b>Week 6</b> Sep25			
<b>Week 7</b> Oct2			
<b>Week 8</b> Oct9			
<b>Week 9</b> Oct16	<b>Field trip for BS Majors</b>		
<b>Week 10</b> Oct23			
<b>Week 11</b> Oct30			
<b>Week 12</b> Nov6			
<b>Week 13</b> Nov13			
<b>Week 14</b> Nov20			
<b>Week 15</b> Nov27			
<b>FINAL</b> Date tbd estimated Dec11			Date: For the date and time of the final for this class, consult the USC <i>Schedule of Classes</i> at <a href="http://www.usc.edu/soc">www.usc.edu/soc</a> .