

USC School of Architecture

Architecture 526: Professional Practice *(last updated 8/9/16)*

Units: 3

Spring Semester

Wednesday lab 1: 10:00 am – 11:50 am, WPH B36

Wednesday lab 2: noon – 1:50 pm, WPH B36

Friday lecture: 10 am – 11:50 am, HAR 101

Instructor: Michael Hricak, FAIA

Office: TBA

Office Hours: send email for appointment

Contact Info: mh@hricak.com

Instructor: Karen Kensek

Office: Harris 208

Office Hours: send email for appointment

Contact Info: kensek@usc.edu

Class Assistants: to be announced

Office: to be announced

Office Hours: to be announced

Contact Info: to be announced

IT Help: Enrique Barajas, School of Architecture

Contact Info: ebarajas@usc.edu; 213-740-3602

Course Description and Learning Objectives

This course explores the comprehensive manner by which architects communicate information regarding built form and design intent using technical drawings and other means of documentation to create construction documents. The course includes an introduction to the basic laws and regulations that affect the practice of architecture as they relate to both design and the creation of construction documents including the role of those Authorities Having Jurisdiction (AHJ) over the project; the review, approval and permit process; the role of peripheral regulatory agencies; and planning, zoning and building codes. The ‘anatomy’ of standard construction information is presented through a thorough review of project documentation, detailing, specifications, drawing formats, and project organization. The course includes a lab portion to demonstrate comprehensive, fully coordinated, and dynamic construction documents via several platforms of building information modeling (BIM) and other pertinent software. Other topics in the class include the role of collaboration, legal responsibilities, building materials and assemblies, financial considerations, project leadership, the role of ethics in making design decisions and in professional behavior, and project and practice management.

Yet, architects cannot effectively communicate their intentions without understanding the various stakeholders’ roles, concerns, agendas and responsibilities. These include the client(s), the users and occupants, project consultants (e.g. structural, MEP, energy, etc.), contractors, sub-contractors, fabricators, suppliers, government officials (e.g. inspections and code compliance), attorneys and other professionals involved in the process. Communication thus becomes not a static list of one time deliverables, but an on-going process – requiring consistent information management and coordination on the part of the architect.

Prerequisite(s): Arch 500a or 605b

Recommended Preparation: ability to create a 3D virtual building

Course Notes

Please note that you are required to attend all the lectures and labs and show up on time.

Technological Proficiency and Hardware/Software Required

Download Autodesk Revit 2017 from <http://students.autodesk.com> . You will also be using Navisworks and perhaps BIM 360 Glue, FormIt, and Insight.

Required Readings and Supplementary Materials

Specific due dates for the readings are listed on the syllabus. You are required to have read the material **before** class. There will be in-class quizzes on the readings and lectures. You may also be asked about general software concepts, but not specific software commands on quizzes. There will be other readings posted on Blackboard.

Required Readings

aiab095712 - AIA BIM contract documents.pdf . Posted on Blackboard.
AIACC_IPD.pdf. Posted on Blackboard.

Effective Use of the IBC/CBC, pages vii through xvi.

http://www.ecodes.biz/ecodes_support/free_resources/2013California/13Building/PDFs/Effective%20Use%20of%20the%20IBC_CBC.pdf

OR

<http://www.bsc.ca.gov/codes.aspx>, Choose...2013 Triennial Edition, Part 2 California Building Code, Building Volume 1 “Effective Use of the IBC/CBC”

Hricak, Michael (editor), American Institute of Architects, **The Architecture Student’s Handbook of Professional Practice**, Fourteenth Edition, John Wiley and Sons, copyright 2009.

Kensek, Karen, **Building Information Modeling**, Routledge, copyright 2014. (Introduction, Chapters 1, 2, 4, 5, one of the case-studies in *Application*)

Optional Readings

G. Nordenson, **Reading Structures: 39 Projects and Built Works**, Lars Muller Publishers, Copyright 2016

P. Lewis, M. Tsurumaki, D.J. Lewis, **Manual of Section**, Princeton Architectural Press, Copyright 2016

NCARB Monographs - Heating and Cooling Design for Buildings

Building Codes Illustrated: A Guide to Understanding the 2012 International Building Code, Francis D. K. Ching and Steven R. Winkel

The Professional Practice of Architectural Working Drawings 4th edition, Wakita, Bakhoum, and Linde

AIA Draft Documents for Review and Comment: E203™–2012, Building Information Modeling and Digital Data Exhibit; G201™–2012 Project Digital Data Protocol Form; and G202™–2012 Building Information Modeling Protocol Form.

Brand, Stewart, **How Buildings Learn, What Happens After They’re Built**, Penguin Books, copyright 1994.

Description and Assessment of Assignments

LATE WORK WILL NOT BE ACCEPTED; TURN IN WHAT YOU HAVE ON-TIME. It is critical that you finish by the deadlines that have been set. Feel free to get ahead in the work for the class, just not behind. Each assignment builds on the next. Sometimes you will be turning in a paper based assignment AND a file on Blackboard. Students are strongly encouraged to come by with work in progress for suggestions before the work is due and come by after grading to learn how they could improve in the future. Please read the assignments carefully – most are done as individuals, but some of the software exercises are done in teams.

Grading Breakdown

	Percentage of Grade	Assignments	Number of points
BIM	20%	Homework 1 – introduction to Revit (team)	10
		Homework 2 – house workshop	20
		Homework 3 – house + structure + mechanical (team)	20
Comprehensive Building Drawing Set	50%	Building Set 1	10
		Building Set 2	20
		Building Set 3 and meet with instructor during class time	40
		Building Set 4	30
Quizzes	10%	There will be several pop-quizzes during class. As with all the assignments, there are no make-ups for these. Come to lecture and lab. Read the required readings. Review previous class notes. Ask questions about things that you do not understand. Bring your books to class.	varies
Exam	20%	Final Exam	100

Assignment Submission Policy

Assignments will be turned in both on Blackboard and as print-outs. They are due **before the beginning** of class. There are **no make-ups** on assignments, quizzes, or exams.

Additional Policies

PLEASE NOTE THAT YOU ARE EXPECTED TO COMPLETE ALL ASSIGNMENTS, EXAMS, AND QUIZZES BY YOURSELF UNLESS IT HAS BEEN DESIGNATED A “COLLABORATIVE” ASSIGNMENT. COPYING OTHER PEOPLE’S FILES OR TURNING IN WORK THAT YOU DID NOT COMPLETE YOURSELF WILL RESULT IN A FAILING GRADE.

Course Schedule: A Weekly Breakdown

	Wednesday Labs 10 – noon: 11412 noon – 2 pm: 11413	Friday Lecture Topics 10 – noon	Required Readings (due at beginning of Wednesday class)
Week 1 Aug. 24, 26	<i>Introduction to Revit. Linking files. Viewing (graphic over-ride, perspectives, hidden components). Printing.</i>	<i>How does an architect “design” & document construction information? Construction Documentation I</i>	BIM: Introduction and one of the four case studies Revit User Guides.zip ASHPP Pgs. 391- 422 Part 1
Week 2 Aug. 31, Sept. 2	HWK 1 due <i>Understanding Revit families. System: walls, roofs, floors</i>	<i>Construction Documentation II</i>	ASHPP Pgs. 391- 422 Part 2
Week 3 Sept. 7, 9	<i>Site, Detailing</i>	BUILDING SET 1 due <i>Evaluation of outline and overall understanding of construction communication</i>	BIM: Chapter 1
Week 4 Sept. 14, 16	HWK 2 due <i>Introduction to Revit Structure</i>	<i>Professional Development I</i>	ASHPP Pgs. 51-64
Week 5 Sept. 21, 23	<i>Introduction to Revit Mechanical</i>	<i>Professional Development II</i>	ASHPP Pgs. 64 -73
Week 6 Sept. 28, 30	HWK 3 due <i>BIM as a database. Door and window schedule with legend. Sheet index.</i>	<i>Design Phases</i>	ASHPP Pgs. 330 -341
Week 7 Oct. 5, 7	<i>Creating Revit Families In-place and loadable</i>	BUILDING SET 2 due <i>Life Cycle Costing I, II</i>	ASHPP Pgs. 341-355 ASHPP Pgs. 356-370
Week 8 Oct. 12, 14	<i>More Revit Families Conceptual mass, curtain wall panels, adaptive components</i>	<i>Building Codes & Standards I</i>	BIM: Chapter 2 ASHPP Pgs. 422-433
Week 9 Oct. 19, 21	<i>Parametric Families</i>	<i>Building Codes & Standards II</i>	BIM: Chapter 4 ASHPP Pgs. 433-451
Week 10 Oct. 26, 28	BUILDING SET 3 due MEET WITH INSTRUCTOR Discuss Building Set 3 <i>Revit phasing, Navis sequencing</i>	MEET WITH INSTRUCTOR Discuss Building Set 3	BIM: Chapter 5
Week 11 Nov. 2, 4	MEET WITH INSTRUCTOR Discuss Building Set 3 <i>Revit clash, Navis clash</i>	MEET WITH INSTRUCTOR Discuss Building Set 3	ASHPP Pgs. 554-573 Part 1
Week 12 Nov. 9, 11	<i>BIM Viewpoint: Architecture</i>	<i>Bidding or Negotiation Phase Construction Contract Administration</i>	ASHPP Pgs. 554-573 Part 2 aiab095712 - AIA BIM contract documents.pdf AIACC_IPD.pdf
Week 13 Nov. 16, 18	<i>BIM Viewpoint: Contractor</i>	<i>Owner/Architect Agreements</i>	ASHPP Pgs. 577-585
Week 14 Nov. 23, 25	Holiday	Holiday	<i>Happy Thanksgiving!</i>
Week 15 Nov. 30, Dec. 2	<i>Conceptual massing – simple energy calculations</i>	BUILDING SET 4 due <i>Construction Contracts</i>	software skills needed.pdf ASHPP Pgs. 612-621
FINAL Dec. 12	December 12 is a Monday!	FINAL EXAM 8 – 10 am	

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/>.

Cheating: Any evidence of cheating will result in the offender(s) being dismissed from this course.

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](http://sarc.usc.edu) describes reporting options and other resources.

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 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.

Religious Holidays

The University of Southern California recognizes the diversity of our community and the potential for conflicts involving academic activities and personal religious observation. The University provides a guide to such observances for reference and suggests that any concerns about lack of attendance or inability to participate fully in the course activity be fully aired at the start of the term. As a general principle students should be excused from class for these events if properly documented and if provisions can be made to accommodate the absence and make up the lost work. Constraints on participation that conflict with adequate participation in the course and cannot be resolved to the satisfaction of the faculty and the student need to be identified prior to the drop/add date for registration. After the drop/add date the University and the School of Architecture shall be the sole arbiter of what constitutes appropriate attendance and participation in a given course.

Please contact **Karen Kensek at kensek@usc.edu by the end of the second week of class** if you anticipate conflicts with religious holidays including missing lectures, inability to finish homework assignments on-time, or other items that may hinder your work in this class.

Accreditation Statement

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/2009_Conditions.aspx.

The Master of Landscape Architecture degree program (for USC’s +3 students with no prior design education, and our +2 for students admitted with advanced standing) is currently in "Candidacy Status" for accreditation by the Landscape Architecture Accreditation Board. All students can access and review the LAAB accreditation standards/process at <http://www.asla.org/Education.aspx>.