UNIVERSITY of NOTRE DAME
School of Architecture

BUILDING TECHNOLOGY 1/ ARCH 20411 & ARCH 60411

Course Syllabus
Fall 2012

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Office Hours: Thursday 2:00-3:45pm or by appointment

Meetings: Tuesdays 12:30 – 1:45 pm, Room: 104
Thursdays 12:30 – 1:45 pm, Room: 104 & Assigned Studios

Course Status: Required for B. Arch and M. Arch Degrees

Course Credit: 3 hours

Drafting Supplies: Architectural Scale, Engineering Scale, Wooden Soft Lead Pencils (#2, HB, or softer), soft eraser (ie: white Staedtler Mars plastic or gum eraser), 11x17 vellum sheets, large format vellum

Introduction:

The arrangement of a building's component parts – in plan, section and elevation – and equally, its method of construction or the proper assembly of its parts – is central to the design of a beautiful, durable and therefore sustainable building.

The aim of this course is to explore the evolution of traditional building techniques - many of which remain examples of customary and standard building practices today – and to develop a practical knowledge and understanding of these primary methods of construction and principles of assembly. Through the exploration of fundamental principles of design and the craft of building, you will gain an ability to think critically about elemental building performance, traditional construction methodologies, emerging building technologies, and available materials with respect to a given design problem.

By the end of the course, you should be able to demonstrate your understanding of the primary methods of construction surveyed in this course, and specifically in the application of these methods in your studio designs through the generation of building and wall sections and technical details.

Lastly, and in preparation for your studies abroad, a thorough study of tectonics and traditional construction methodologies will teach you how to apply what you see and to gain an appreciation for tectonics as a way of seeing, understanding, and ultimately creating architecture.

Course Content:

1. **Readings**: Regular readings will be assigned from one of the required texts or materials on Reserve. All readings are to be completed **prior** to the topical lecture that week.

2. **Assignments**: Occasionally you will be given a small assignment outside of your regular readings and projects.

3. **Quizzes**: Each week, we will review the topics presented in lecture and the readings in the form of a short quiz. Quizzes missed due to an excused absence from class *may* be made-up, at the instructor's discretion.

4. **Projects**: You will be assigned three projects this semester which are intended to demonstrate your understanding of the principle methods of construction presented in class and your ability to apply these concepts in your designs. The final project for this course will correspond directly with your design studio (ARCH 244/ ARCH 644) project requirements (with the exception of the Path B graduates).

   Your grade for the project(s) in this course will be based upon your graphic presentation of the principles of construction and tectonics that you understand and have employed. Although it is intended that a portion of your project work for this course will be incorporated into your studio design projects, we will hold – in the context of this course – separate reviews to discuss in greater detail the materials, methods, and tectonic issues of construction of your designs.

Grading:

Class Participation:	10%
Quizzes & Assignments:	30%
Project 1:	15%
Project 2:	20%
Project 3:	25%
TOTAL:	**100%**

Grading Scale[1]:

100-90:	A
89-80:	B
79-70:	C
69-60	D

A	4.00	Truly exceptional: work meets or exceeds the highest expectations for the project/ course
A-	3.667	Outstanding: Superior work in *all* areas of the project/ course
B+	3.333	Very good: Superior work in *most* areas of the project/ course
B	3.000	Good: Solid work across the board
B-	2.667	More than acceptable, but falls short of solid work
C+	2.333	Acceptable: meets *all* basic standards for the project/ course
C	2.000	Acceptable: meets *most* of the basic standards for the project/ course
C-	1.667	Acceptable: meets *some* basic standards; work falls short of meeting basic standards in several areas
D	1.000	Minimally passing; work just over the threshold of acceptability
F	0	Unacceptable performance

[1] Refer to page 17 of The University of Notre Dame Undergraduate Studies *Bulletin of Information 2008-2009*

Class and Studio Conduct:

1. **Attendance is required in class and in studio and on all field trips**. Three unexcused absences will result in a lowered grade for the course; 1 grade point per 3 absences. Please refer to page A-9, section 13.2 in *du Lac* for the University's policy on absences. Absences due to illness or personal and family emergencies will be evaluated *by the instructor* on an individual basis.

2. Participation in class is integral to learning (and will be counted as part of your grade for this course).

3. Project requirements are due on the dates stipulated in the course calendar and project briefs. **Late work will not be accepted**.

4. Project requirements are to be carried out individually, by hand, and without the assistance of a light table, tracing, or computer.

5. In order to promote a constructive learning environment, use of **ANY** of the following electronic devices is not permitted during class (lecture, studio, field trips): laptops, cell phones, PDA's, visual or audio storage or playing devices.

6. It is strongly recommended that notes for this course be taken by hand and kept in a single sketchbook along with your process drawings and sketches for your projects. Sketchbooks may be collected for evaluation by the instructor during the semester. **If you choose to take notes using a laptop, you must alert the instructor at the beginning of class. Instructor may re-evaluate (and revoke) a student's permission to use a laptop in class at any time.**

7. In order to limit disruption and distraction in class (not fair to your peers or your instructor) please refrain from eating in class. If you must eat in class, please do so with the utmost respect for your classmates, University property, and your instructor.

8. All students entering the School of Architecture were invited to sign a form giving the School permission to hold their work for exhibition and to publish it. If you signed that form, work done in this course may be retained. It will of course be available to the author for photographing and will be returned. Because work held for exhibition may be held beyond graduation, be sure that it is labeled on the back with your name and an address to which it can be returned. The School routinely retains work for the National Architectural Accrediting Board's review of the program, so work representing the range of accomplishment in the course may be retained for this purpose, as well.

9. Please check your Notre Dame e-mail account regularly. Any communication from the instructor about this course outside of regular class hours will be directed to your University account. *You are responsible for knowing all course communication in a timely manner.*

Required Texts:

1. Edward Allen, *Fundamentals of Building Construction, Materials & Methods,* 5th Edition
   John Wiley & Sons, 2004

2. Francis Ching, *Building Construction Illustrated,* Fourth Edition, Van Nostrand Reinhold,
   New York, 1991

3. University of Notre Dame, School of Architecture: Studio Companion

Required Reading (Copies on Reserve in Bond Hall Library, and on-line via E-Reserves and Google Books):

1. Leon Battista Alberti, *On The Art of Building in Ten Books,* MIT Press, 1988
   Translated by Joseph Rykwert, Neil Leach, Robert Tavernor
   Book 1: Lineaments, Book 2: On Construction

2. Vitruvius, *Ten Books on Architecture,* Dover (1960) or Cambridge Edition (1914)
   Book 1 Preface and Chapters 1-3

Reference Texts (1 Copy of each on Reserve in Bond Hall Library):

1. Albert G. H. Dietz, *Dwelling House Construction,* Fifth Edition, MIT Press, 1991

2. Philip G. Knobloch, AIA, *Good Practice in Construction,* Pencil Points Press, Inc.,
   New York, 1931

Suggested Readings (1 Copy of each on Reserve in Bond Hall Library):

1. Alexander Tzonis and Liane Lefaivre, *Classical Architecture; the Poetics of Order,* MIT Press, 1986

2. Demetri Porphyrios, *Classical Architecture,* Academy Editions, 1992
   Chapter 4 Character and Style
   Chapter 5 Common Sense
   (Recommended: Original Sources in Appendix)

3. Le Corbusier, *Toward a New Architecture,* Praeger Publishers, 1960

4. Edward R. Ford, *Details of Modern Architecture: Vols. 1 & 2,* MIT Press, 1996.

5. Otto Wagner, *A Modern Treatise on Architecture,* The Getty Center for the History of Art and Humanities, Santa Monica, CA, 1902
   Chapters: The Architect, Construction