

Course Number: **ARC 6611**
Course Title: **Advanced Topics Architectural Technology – Materials & Methods of Construction 2**
Term: Fall 2016
Professor: Stephen Bender, Adjunct Assistant Professor, UF Professor in Residence
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Faculty office: CityLab-Orlando Office
Office hours Monday 3:00 PM – 4:00 PM (and by appt.)
Credits 3
Meeting times: Monday / Wednesday 1:00 PM to 02:30 PM
Section Number: 25FG
Room Number: TBA

SYLLABUS

Course Description and Role within the Sequence

Materials and Methods of Construction is structured to give the student of architecture a conceptual, theoretical and technical base for the inventive, creative and responsible use of materials associated with the built environment. The course covers not only the systemic relationships between constructional aspects of conventional materials, but also the historical and theoretical underpinnings of their contemporary adaptations and the importance of a sustainable position towards their use.

Student Performance Criteria + Learning Goals

The course specifically addresses the following NAAB (National Architectural Accrediting Board) Student Performance Criteria:

- Building Envelope Systems (#21): Understanding of the basic principles and appropriate application and performance of building envelope materials and assemblies.
- Building Materials and Assemblies (#24): Understanding of the basic principles and appropriate application and performance of construction materials, products, components, and assemblies, including their environmental impact and reuse.
- In the context of NAAB Criteria, understanding means "the assimilation and comprehension of information without necessarily being able to see its full implication."

Lecture Format

Each class is typically presented in lecture format with images presented in parallel PowerPoint slides. The lecture is based on the text, but content will shift based on particular questions and conversations that may arise from students during the course of the lecture. This means that you must be attentive and a meticulous note-taker. It is quite possible that the content of a particular discussion will be used to frame a pop-quiz or, be found as a test question within a scheduled exam.

Note: Cell phones must be turned off during class and exams. You will be asked to leave if you send and/or receive calls or text messages.

Exams, Quizzes, and Make-up Exams

There will be three (2) scheduled exams. The first exam is worth 25% of your total grade and the second 30%, for a total of 55%. Unannounced quizzes will be given throughout the semester for extra credit. Quizzes may at times cover materials in the readings due on a certain date that have not yet been covered in lecture, so it is to your advantage to do the readings on or before the dates they are to be discussed in class. Reflections and Homework are cumulatively worth 20% of your total grade. Make-up exams will be scheduled only for those students who miss an exam due to emergency medical issues or a death in the family. Signed notes from physicians will be required to excuse any absence and schedule a make-up exam. It is the student's responsibility to secure these and provide them to the faculty within five days of a missed exam. Students will receive a grade of 0% (letter grade "E") for any exams which are missed due to unexcused absences.

Presentation + Paper

In addition to the exams and quizzes a short group presentation and final paper will be due during the semester. More information on these will be given as the dates approach. The presentation is worth 10% and the paper 15% of your total grade.

Attendance

All students are expected to attend every scheduled studio meeting. It is not possible to make up a missed studio session. Notes will be useless, and although a long conversation with a fellow student will help you begin to figure out what to do to prepare for the next session, it can never make up the learning. A session with your professor may or may not be possible and cannot duplicate the collective conversation. As a result, our policy on attendance is extremely strict:

ANY absence must be registered. Your instructor will let you know how to leave a message for him/her if you have

to miss class. It is your responsibility to get the assignments from your fellow students. Two un-excused absences may adversely affect your grade. Three un-excused absences may be grounds for failing the course. Chronic lateness will also affect your grade. It is never permissible to miss a critique, nor is it permissible to be late or to leave early during a presentation or review.

Online Course Management

Syllabus, assignments, readings, etc, will be hosted through UF's Canvas course management interface. Most assignments and tests will be turned in and graded through the site. <https://ufl.instructure.com/>

Grading Scale:

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Numeric Grade	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	0-59

To clarify the system of grading for studio classes:

A Outstanding work only

A- Close to outstanding

B+ Very Good Work

B Good Work

B- Good work with some problems

C+ Slightly Above Average Work

C Average Work

C- Average Work with some problems

D+ Poor Work with some effort

D Poor Work

E Inadequate Work

The current UF grading policies for assigning grade points can be found at

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>. An incomplete grade may be assigned at the discretion of the instructor as an interim grade only in cases of extreme extenuating circumstances. Note that the incomplete grade must be resolved prior to enrolling in next design sequence course.

Academic Honesty

Students in the School of Architecture are expected to adhere to all University of Florida academic honesty policies. Failure to do so will result in lowered grades and/or referral to the University Honor Court. The University of Florida maintains a student honor code regarding cheating and use of copyrighted materials produced by others. It can be found at <http://www.dso.ufl.edu/judicial/honorcode.php>. Since the University's policies are necessarily generalized, the School of Architecture further clarifies academic honesty within the specific setting of design education. The following acts are considered to be academic dishonesty:

1. Plagiarism/misrepresentation

There shall be no question of what your work is and what someone else's is. This applies to all aspects of student performance, including but not limited to

- CAD drawings and construction details
- design guidelines (written and graphic)
- design, planning, and management projects or portions of projects
- class reports and papers (again, both written and graphic information)
- any assignment where sole authorship is indicated, such as take-home tests, individual projects, etc.

Examples of inappropriate activities include:

- copying graphics for a report without crediting the original source
- representing someone else's work as your own (using existing CAD construction details, tracing drawings, etc.)
- allowing someone else to represent your work as his own

Given the collaborative nature of design studios, interaction between students is *desirable*, but the intention and degree of assistance must be *appropriate*. For example, it is appropriate to discuss the assignment/method/software program/course materials—but it is not appropriate to solve or resolve a large portion of the project together.

The importance of precedent and learning from past works is a necessary part of most design processes. Again, it is the intent and degree of "borrowing" ideas that is at question.

Anything not original must be paraphrased and cited, or quoted; using accepted style formats such as APA, MLA, Chicago Manual of Style, etc. This includes information obtained from the Internet, public documents, graphics, and personal interviews as well as more traditional written sources. Proper crediting of all information that is not common knowledge is necessary for academic honesty as well as for professionalism. (For example, analysis drawings and/or text should cite the sources from which data was obtained so that if questions arise later, they can be quickly and accurately answered.)

2. Multiple submissions of the same or similar work without prior approval

If the instructors understand that you are doing a paper associated with your thesis or senior project topic, then doing similar work for two different classes is acceptable—if the instructors agree to it. If a single paper is submitted for one class, then later is submitted for another, and the instructors expect original work, then the multiple submission is inappropriate.

3. Falsifying information

Examples include:

- misrepresenting reasons why work cannot be done as requested
- changing or leaving out data, such as manipulating statistics for a research project, or ignoring/hiding inconvenient but vital site information. (However, for educational purposes only, certain aspects of the “real world” may be jointly agreed upon as not being pertinent to the academic goals of the course, such as not dealing with specific project parameters or budget, changing the program, etc.)
- altering work after it has been submitted
- hiding, destroying, or otherwise making materials unavailable (hiding reference materials, not sharing materials with other students, etc.)

Course Evaluations

In the last three to four weeks of the semester, you will receive an electronic notification and hyperlink that will allow you to complete online course evaluations. Your thoughtful responses to these questions will help inform both the content and conduct of the course in subsequent semesters.

Counseling + Emergency Contacts

Police / Fire / Medical Emergency – 911

Consult CityLab-Orlando Student Resources for Emergency contact information

UF Counseling and Wellness Center, 3190 Radio Road, 352.392.1575, <http://www.counseling.ufl.edu/cwc/>

Required Textbook (Many texts are available as ebooks but the ability to flip through them is priceless. I recommend paper.)

Allen, Edward, and Joseph Iano. **Fundamentals of Building Construction: Materials and Methods**. Hoboken, NJ: John Wiley & Sons, 2014. Print.

Or

Fundamentals of Building Construction: Materials and Methods with Interactive Resource Center Access Card, 6th Edition Binder Ready Version 6th Edition. Can be acquired on Amazon or direct from Wiley. Check for promo codes.

Fundamentals of Building Construction is a good source for holistic connections between theory, history and practical application. It is of paramount import that you read the text thoroughly. You are responsible for ALL of the content of the text. The text is used as a guide while it frames the class. It is not the sole source and at times the lectures diverge based on in-class discussions, current situations in your studio or the need/desire to explain in detail certain concepts. There is also the possibility that we will have guest lecturers, often with short notice.

Ching, Francis D. K. **Building Construction Illustrated**. Fourth or fifth edition, 2014. Print.

This is the classic visual guide to the basics of building construction.

Course Bibliography/Recommended Texts and Resources

Many of these texts are available from the UF libraries. I will bring some as we cover material. If you would like to look at a particular volume please let me know and I can pick it up for you.

Deplazes, Andrea. **Constructing Architecture: Materials, Processes, Structures, a Handbook**. Basel: Birkhäuser, 2005. Print. *This book is not required but it does form the basis for the tilt in our conversation toward material choices as the origin of design decisions.*

Watts, Andrew. **Modern Construction Handbook**. Second or third edition, 2013. Print. *An excellent source for 3-dimensionally illustrated assemblies of somewhat less than typical building systems. Available and recommended for your library.*

Schittich, Christian, and Florian Musso. **Building Simply**. München: Edition Detail, Institut für internationale Architektur-Dokumentation, 2005. Print. *A beautiful volume dedicated to projects of near singular materiality; theoretical, instrumental and detailed. Too bad it is scarce... 9 used & new from \$499.49*

Note that all responses are confidential and are not connected with individual respondents in any way. Summary evaluation information is not available for review by the faculty until AFTER course grades are issued, and is not connected to individual respondents in any way.

Policy on Retaining Work

Please note that the University of Florida College of Design, Construction and Planning policies state that students' work may be retained indefinitely for academic purposes. You should be prepared for the instructor to ask that it be exhibited and/or photographed during or after the term. Having your work retained for photography and/or exhibition is evidence of its quality and value to the school. You will always be able to either retrieve your original work or retrieve it temporarily to make copies/photograph it for your own personal purposes.

Students with Special Needs. Students with special physical needs and requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. All attempts to provide an equal learning environment for all will be made.

Ford, Edward R. The Details of Modern Architecture: Vol 1. Cambridge, Mass: Mit Press, 2003. Print.

Ford, Edward R. The Details of Modern Architecture: Volume 2 1928 to 1988. Cambridge, Mass: MIT Press, 1996. Print.

Allen, Edward, and Joseph Iano. The Architect's Studio Companion: Rules of Thumb for Preliminary Design. Hoboken, N.J.: John Wiley & Sons, 2012. Print. *You will be required to own this book for later design studios. A bit much for you now, but...*

Dennis J. Hall and Charles Rick Green. The Architect's Guide to the U.S. National CAD Standard. Hoboken, New Jersey: Wiley & Sons, Inc. 2006.

Frances D.K. Ching and Steven R. Winkel. Building Codes Illustrated, 3rd Edition. Hoboken, New Jersey: Wiley and Sons, Inc. 2009.

Linda Brock. Designing the Exterior Wall: An Architects Guide to the Vertical Envelope, New York: Wiley Press, 2005.

Brownell, Blaine. Transmaterial, New York: Princeton Architectural Press, 2006. See also <http://transstudio.com>

Thomas Herzog, Roland Krippner, Werner Lang. Facade Construction Manual, Basel: Birkhauser Press, 2004.

Schittich, Christian. Cost-effective Building: Economic Concepts and Constructions. München: Edition Detail, Institut für internationale Architektur-Dokumentation, 2007. Print.

International Code Council. Florida Building Code, 2007.

Friedbert Kind-Barkauskas, Bruno Kauhsen, Stefan Polonyi, Jorg Brandt. Concrete Construction Manual, Basel: Birkhauser Press, 2002.

Gunter Pfeifer, Rolf Ramcke, Joachim Achtziger and Konrad Zilch. Masonry Construction Manual, Basel: Birkhauser Press, 2001.

Charles Ramsey, Harold Sleeper, John Hoke. Architectural Graphic Standards, New York: Wiley, 2000.

Christian Schittich, Gerald Staib, Dieter Balkow, Matthias Schuler, Wener Sobek. Glass Construction Manual, Basel: Birkhauser Press, 1999.

Helmut Schulitz, Werner Sobek, Karl Habermann. Steel Construction Manual, Basel: Birkhauser Press, 2000.

Eberhard Schunck, Hans Oster, Rainer Barthel, Kurt Kiessl. Roof Construction Manual, Birkhauser Press, 2003.

Additional References will be provided electronically.

The UF e-learning portal may be used for sharing of certain common references available in electronic format. It will be accessible at <https://ls.at.ufl.edu/>. Tutorial resources are available to you at this location also. Be sure to make use of "lynda.com" for help with Adobe products, Revit Architecture, Rhino, V-Ray, etc.

Disclaimer

This syllabus represents current plans and objectives. As we proceed through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected. Any changes will be relayed during regular studio meetings.