ARCH 661 Teaching Technical Subjects in Architecture
CRN: 10533 (1 or 2 credits) October 24, 2015 9:00 am - 5:00 pm (279 LA)

Instructor:
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DESCRIPTION
This course provides a forum for those interested in pursuing the Technical Teaching Certificate, a teaching career in design and technology, and/or gaining preparation for Graduate Teaching Fellowships (GTFs). We will discuss pedagogical issues related to teaching technical subjects. Students will develop brief presentations for the class that will be peer-critiqued. Those who wish to take the course for 2 credits will conduct a teaching critique and written response of teaching in a technical course.

COURSE OBJECTIVES
• familiarize those interested in teaching technical subjects and prospective GTFs in using materials from technology courses (ECS, structures, building construction
• develop innovative hands-on, experiential exercises for technical subject areas
• provide a forum for discussion about teaching technical subjects and general handling of teaching issues related teaching and learning

COURSE REQUIREMENTS
• Discussion: issues related to teaching as a career
• Presentation: .ppt or demonstration (or other teaching technique) of a concept or principle that will increase understanding of the material and connection to design
• Facilitate: discussion of issues related to teaching technical topics and handling discussion sections
• Reading response on Notes to Myself, or if repeating, another book on teaching

COURSE EVALUATION
Teaching Moment 50%  Reading Response 10%
Discussion, In-class Activity 40%  Graded or P/NP options

REQUIRED TEXT:
Ed Allen, Notes to Myself, self-published, 2002. provided to class

RECOMMENDED READINGS
• Esquith, Rafe, Teach Like Your Hair is on Fire, Penguin, 2007.

PREREQUISITES
ECS, structures or materials sequence of required courses or concurrent enrollment

Satisfies a requirement for the Technical Teaching Certificate Program
may be repeated for credits under same course number
Discussion Topics: (~1 hour) Lead informal discussion on a suggested discussion topic above or one of your choice. Outline several directions to lead the discussion and summarize with a list of outcomes. Report back to the group.

Grading Fairly and Consistently
Drawing the Line, setting boundaries
The First Day
Teaching Yours Peers
Reducing workload, maintaining standards
Handholding or Inspiring
Plagiarism
Persuasive presence

Concept Presentations: (5 minutes each) Research and create a presentation to describe a concept, principle, or phenomenon, using a demonstration, slides, or some teaching technique that will increase understanding of the material and connection to design. Concept examples may be from ECS, Materials and Methods, or Structural Technology and must be related to the design process.

ECS Topics
- heating degree day
- dewpoint
- balance point
- thermal comfort
- Psychrometric chart
- daylight factor vs. Transmittance
- SC vs. SHGC
- Zero Net Energy
- plug loads
- vapor retarders/air barriers
- temperature gradient
- transmission loss
- cool towers vs cooling towers
- balance point
- glare
- lighting power density
- noise criteria
- reverberation time
- thermal bridging
- emittance
- low-e glazing

Materials & Methods
- aluminum extrusion
- rolling wide-flange shapes
- Portland cement manufacturing
- gypsum calcination and rehydration
- converting logs to lumber
- plywood vs. OSB
- framing an opening in wood stud wall
- brick bonds
- life cycle analysis

2014 SPC Addressed:
- B.6 Environmental Systems
- B.7 Building Envelope Systems and Assemblies
- B.8 Building Envelope Systems and Assemblies
- B.9 Building Service Systems

Structures
- finding beam reactions
- stress/strain curve
- Parallegram Law
- components of a force
- stress
- strain
- bending
- moment

Topical Outline:
- 40% Sustainability
- 20% Environmental Systems
- 20% Building Envelope Systems
- 20% Building Materials & Assemblies