

Course Syllabus

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ARCH A4124 Building Systems & Materials Fall 2016 655 Schermerhorn Extension 2-6

Wednesdays

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Description

This course surveys historic building systems and materials. The first part focuses on traditional building materials such as stone, brick, terra cotta, metal, concrete, cast stone, mortar, and wood and explores sourcing and production of the materials, identification, use in the fabrication of architectural elements, basic properties that limit or allow their use and performance as architectural materials. This part of the course also serves as the foundation for most of the subsequent material-based conservation courses such as: 1. Architectural Metals, 2. Concrete, Cast Stone & Mortar, 3. Brick, Terra Cotta & Stone, and 4. Wood: It's Properties, Use & Conservation.

The second part of the semester surveys historic building systems and approaches the building not from its constituent materials and their properties but as an assembly of particular materials & building elements. It studies the design, detailing and material together to understand how materials interact and to assess their collective performance. It deals with building technologies as they began to emerge by the middle of the 19th century with steel or concrete structural framing systems and their exterior cladding of brick, terra cotta, and stone, glass and metal curtain wall systems, and, pre-cast concrete and stone panels.

Readings & Assignments

Readings and Assignments are posted in *Assignments*.

Grades

Attendance & class participation 20%

Assignments 30%

Examinations 50%

Schedule

7 September

1. Introduction to First Half of Course AND Field Trip - FACULTY TEAM

14 September

2. Stone: extraction, production & historical use; properties & identification AND Field Trip - WHEELER

21 September

3. Brick & Terra Cotta: raw materials & production; Brick: properties, historical use, classification, bond - WEISS

28 September

4. Terra Cotta: properties & historical use AND Field Trip - WEISS/ALLEN; Lime, Gypsum & Cement: raw materials and production - WEISS

5 October

5. Concrete, Mortar & Plaster: production & historical use; properties & performance AND Field Trip - WEISS

12 October

6. Metals: properties, performance & historical use; raw materials, production & identification - PIEPER

14 October (Friday)

7. Field Trip for Metals - PIEPER

19 October

8. Wood: extraction, production & historical use; properties performance & identification - CHILDS

26 October

9. IN CLASS MIDTERM EXAMINATION; Introduction to Second Half of Course AND Field Trip - FRIEDMAN

2 November

NO CLASS APT CONFERENCE IN SAN ANTONIO

9 November

10. Foundations - DEVONSHIRE; Floors - FRIEDMAN

16 November

11. Wall Systems and Roofing Systems -DEVONSHIRE

23 November (2-4 pm only)

12. Windows & Doors - GEMBINSKI

30 November

13. Wood Frame Construction - CHILDS; Steel Frame Construction and Concrete Frame Construction - FRIEDMAN

7 December

14. Masonry Cladding and Curtain Wall - GEMBINSKI

9 December

15. IN CLASS FINAL EXAMINATION