

Number & Title of Course:

ARCH 4030 Mechanical and Electrical Systems, 4 credits

Course Description:

This course is an introduction to the variety of principles and systems at work in a building. Topics emphasized: environmental resources, environmental control, fundamental envelope performance and life safety.

Course Goals:

- Assess and communicate the system needs and solutions for a given building type.
- Respond to sustainable principles through an approach to the contextual resources and the building systems.
- Explore the synthesis of building systems, and convey the architect's point of view in communicating strategies for integrating systems within the building.

Course Objectives:

- Students should understand the importance of climate, site analysis, and envelope assembly as it relates to the environmental systems and control.
- Students should be able to apply basic design strategies for Indoor Environmental Quality, HVAC, lighting, plumbing systems, and acoustics.
- Students should be able to evaluate the impact of system size and location on building design.
- Students should understand life safety requirements such as alarms, suppression and protection systems.

Student Performance Criterion addressed:

B.6. Environmental Systems

Topical Outline:

Understanding Resources (10%) Understanding Systems (40%)

Application of Concepts (50%)

Prerequisites:

ARCH 4000 Design V: Technology

Textbooks/Learning Resources:

Mechanical and Electrical Equipment for Buildings; 11th Edition; Stein, Reynolds, Grondzik, Kwok; John Wiley and Sons; 2010

Offered:

Spring, Annually

Faculty assigned:

Stacey Bowers, Adjunct Assistant Professor of Architecture (Spring 2017)

Philip M Freeman, Associate Professor of Architecture (Spring 2016)