Course Title: Environmental Principles  
Course Number: ARCH 4302  
Instructor: John Nelson, Associate Professor  
Office: 229 School of Architecture, eMail: janelson@uncc.edu

Credit Hours: 3 credit hours: Required course for Architecture Students  
Co-Requisites: Undergrad ARCH 2101

Premise: ....the ultimate task of architecture is to act in favor of human beings: to interpose itself between people and the natural environment in which they find themselves, in such a way as to remove the gross environmental load from their shoulders.

James Marston Fitch  
American Building The Environmental Forces that Shape It  
(originally published in 1947)

Content: This course includes content related to the following NAAB Student Performance Criteria:

• (B.6) Environmental Systems: Ability to demonstrate the principles of environmental systems’ design, how design criteria can vary by geographic region, and the tools used for performance assessment. This demonstration must include active and passive heating and cooling, solar geometry, daylighting, natural ventilation, indoor air quality, solar systems, lighting systems, and acoustics.

• (B.9) Building Service Systems: Understanding of the basic principles and appropriate application and performance of building service systems, including lighting, mechanical, plumbing, electrical, vertical transportation, and fire protection systems.

Method: The primary content of the course will be presented in a lecture format. The required weekly readings, completed before each class, will provide a background to facilitate understanding and add breadth to the discussion. Hands-on application of selected concepts will be explored through projects. Quiz and examination questions will be drawn from both the assigned readings and lectures. Assignments/projects will be assigned throughout the semester. The work will be submitted before the beginning of the each class period.

Understanding the systems and concepts presented and discussed in this course, and their connection to the broad arena of architecture, requires that you reflect upon potential applications for such systems in the buildings that you design. You are strongly encouraged to engage and make contextual sense of the concepts presented in class—as opposed to simply listening to the lectures and mechanically completing the projects. Design is a messy endeavor; get your hands dirty and your brains exercised.

Evaluation: The overall course grade will be based upon a cumulative tabulation of the various assignments, quizzes, case study, midterm and comprehensive final exam.


Additional Readings will be posted on Moodle.