ARCH-DES 697K
Green Building and Historic Preservation

Administrative Information:

- ArchDes 597K: Fridays 1:00 - 4:00
- Room: 211 Holdsworth Hall or Lecture Room at HSV (see schedule)
- Instructor: L. Carl Fiocchi (fiocchi@eco.umass.edu)
  Office: 110 Holdsworth Hall

  Office Hours: By appointment only
- Course Website: Moodle (https://moodle.umass.edu/)
  or
  ArchDes 697K Blog (http://blogs.umass.edu/lfiocchi/)

  Login for both are OIT Username & Password

Course Objectives:

The objectives of this course are threefold:

- Underscore the critical connection between Building Science and Climate Change.
- Provide fundamental views of the physics involved within buildings through a basic examination of the movement of heat, air, and moisture through the various building components, assemblies, and systems of a building; in order to better understand how they interact and affect one another, the building as a whole, and the environment.
- Examine Green Building research, technologies, systems, assemblies and materials currently being implemented in historic buildings.

Expectations:

- A significant portion of your learning will come from classroom lectures, discussion, and presentations; therefore attendance and participation are mandatory. Unexcused absences and tardiness will adversely affect your grade. Participation is extremely important in this class and is a contributor to10% of your grade. The impact on the grade will depend on both the quantity *and* quality of your contributions to the discussions and your level of professionalism.

- In this course, effective participation (as well as complying with the Homework requirement) will require that you prepare outside of class by completing all of the assigned readings prior to the Tuesday before each class session, gathering additional information from an array of reputable sources, and making steady progress on your research projects. As current or aspiring professionals in the field, students are also expected to be enthusiastic consumers of material related to their chosen profession. The assigned readings represent the minimum readings required for the course.

- It is assumed that as Graduate Students a significant mastery of presentation skills have been acquired and will be demonstrated in the required presentation in both visual content and accompanying narrative resulting in a polished professional product.

- The two written assignments are to be executed at a graduate level of competency referencing style, punctuation, grammar, spelling, accuracy, organization, clarity and content.

Schedule:

Date	Topic	Assignment
September 7 #1	Introductions Course Introduction & Syllabus Student Introductions Assignment 1: Description Raison D'Etre Course Philosophy and Structure Historic Preservation Definitions and Philosophy Green Building & Sustainability Definitions and Philosophy Climate Change Definitions and Philosophy Precedent	**Readings are to be completed by the next class meeting** 1.1 The Secretary of the Interior's Standards for Rehabilitation 1.2 Historic Preservation and Green Building- A Lasting Relationship 1.3 Embodied Energy and Historic Preservation, A Needed Reassessment 1.4 A Life Cycle Assessment Study of Embodied Effects for Existing Historic Buildings

September 22 #2	Charters, Standards, Organizations Similarities, Differences, Accord Life Cycle Assessment (LCA) Precedent	2.1 Saving Energy in Historic Buildings, Balancing Efficiency and Value 2.2 Green Home-Rating Systems, A Preservation Perspective 2.3 Integrating Environmental and Cultural Sustainability for Heritage Properties
October 5 #3	Student Precedent Presentation 1 Student Precedent Presentation 2 Energy and Buildings: The System Energy and Buildings: Quantifying Energy in Buildings Precedent	3.1 GFTGU pgs. 23-40, 47-58 3.2 Szokolay § 1.1.1-1.1.2 (Heat Flow) 3.3 Szokolay § 1.1.3 (Moisture Flow) 3.4 Szokolay § 1.1.4 (Air Flow)
October 19 #4	Workshop	4.1 Thermal Performance of Traditional Windows and Low-Cost Energy Retrofits 4.2 Windows Understanding Energy Efficient Performance 4.3 Should the Walls of Historic Buildings Be Insulated 4.4 Designing for Building Performance - The Management of Change

November 3 #5	Student Precedent Presentation 3 Student Precedent Presentation 4 Assignment 1: Due Assignment 2: Description Energy and Buildings: Building Physics 1 Energy and Buildings: Building Physics 2 Precedent	5.1 TBD 5.2 TBD 5.3 Moisture Control in the Modern Building Envelope - History of the Vapor Barrier in the U.S.
November 16 #6	Mid Term Exam: thru Nov 2 Energy & Buildings: Envelope 1 Energy and Buildings: Envelope 2	6.1 Interior Insulation Retrofits of Load-Bearing Masonry Walls 6.2 How to Nudge Consumers to Be Environmentally Friendly 6.3 Energy Simulation of Historic Buildings
November 30 #7	Student Precedent Presentation 5 Student Precedent Presentation 6 Guest Lecturer: Benjamin S. Weil, Ph.D., Green Economics Energy & Systems: Challenges to Envelope Modifications Green Strategies 1 Precedent	7.1 Heating, Ventilating, and Cooling Historic Buildings 7.2 Cooling Load Reductions in Museum House
December 8 #8	Student Precedent Presentation 7 Student Precedent Presentation 8 Energy & Systems: Green Strategies 2 Energy & Systems: Heating & Cooling Systems include alternative and renewable options Precedent	

Note: Schedules and Readings are subject to change

Course Information:

- Assigned Readings = Weekly
- Homeworks = Reading Responses
- Assignment 1 = Paper and Presentation
- Exams = one
- Assignment 2 = Final Paper

Readings:

- Posted on Course Website
- These readings will be drawn from a variety of books and journals focusing on Historic Preservation and Green and Sustainable Practices and Strategies.
- By the Tuesday before each class you will be expected to have submitted electronically (Word Document):
    1. One question (one sentence) for each reading
    2. One comment (one - two paragraphs) for each reading about what you found most interesting or surprising about each reading.
- Each paper will be commented on and returned, prior to the next meeting and will serve as a dialogue between classes.

Assignment 1: Paper and Presentation

See Assignment 1 Handout and Green Strategies Handout

Assignment 2: Final Paper

Assigned Nov. 3

Project Due Date: 12-14

Midterm Exam:

- 1 hour
- Multiple Choice, T/F, Short Answer
- One "Cheat Sheet" 8.5"x11" single side; handed in with exam and returned with exam

Grading:

- Attendance & Participation: 10% of Grade
- Reading Responses: 10% of Grade
- Assignment 1: Paper 15% of Grade

  Presentation 15% of Grade
- Midterm: 20% of Grade
- Assignment 2: Paper 30% of Grade

Letter Grading:

- A ≥ 93.0 % | A− = 90.0-92.9 %
- B+ = 87.0-89.9 % | B = 83.0-86.9 % | B− = 80.0-82.9%
- C+ = 77.0-79.9 % | C = 73.0-76.9 % | C− = 70.0-72.9 %
- D+ = 67.0-69.9 % | D = 60.0-66.9 %
- F < 60.0 %

Grievance Procedure:

If you feel that an awarded grade is not accurate for whatever reason, you may dispute it by submitting a written explanation together with the marked material to the instructor within two weeks of receiving the marked material.

Special Needs:

All reasonable efforts will be made to meet the individual needs of the student. If you have a learning disability or need special accommodation please make an appointment with the instructor to discuss your needs. I also encourage you to contact me if you are an international student (or otherwise new to the English language) in need of help for climbing the “language barrier”.

All discussions will be kept strictly confidential.

Academic Honesty:

The University Academic Honesty Policy applies. This policy can be found in the Graduate School Website: University Policies and Regulations (http://www.umass.edu/gradschool/handbook/univ_policies_regulations.htm) and covers plagiarism, cheating, fabrication, and facilitating dishonesty. Occurrences of any of those practices will be dealt with according to university policy.