ICM 6682 Construction Ecology & Metabolism
SYLLABUS

COURSE DESCRIPTION
This course has the objective of determining how to apply ecological theory and developments in industrial ecology to create what has often been described as Ecological Design for the built environment. Although Ecological Design or Ecologically Sustainable Design has been one of the key aspects of sustainable construction or green building, upon closer examination, contemporary approaches lack any true understanding of or incorporation of ecological principles, research, approaches, or key ideas. This course examines the major schools of thought in present day ecology to determine what can be applied either as model or metaphor for green buildings. The new discipline of Industrial Ecology, which applies ecology to industrial operations such as manufacturing, is examined for approaches that can be applied to Ecological Design. The work of architects attempting to apply ecology in their work will be examined to determine the state of environmentally friendly buildings being created using current approaches. Throughout the course subsidiary issues of materials, energy, water, land use, and the integration of the natural and built environments will be examined. Specific directions will be provided during the course several weeks prior to the Due Date.

GENERAL DIRECTIONS
The reading assignments are keyed to books, papers, the textbook, or Environmental Building News (EBN). When the assignment is to Read the reference, it is intended that you gain a thorough understanding of the book, paper, or other material. Scan means to obtain a cursory understanding or familiarity with the subject matter of the assignment. View means that the student is to view the Powerpoint lecture or video.

COURSE MATERIALS
This course has one required textbook and the online monthly journal, Environmental Building News, is also used.

Textbook

Environmental Building News
There are two ways of accessing Environmental Building News:

(1) Through the UF Library e-journal system. Log to www.uflib.ufl.edu and log into the library system. Click on Online Journals in the catalog and search for Environmental Building News. When the www.buildinggreen.com website you will
have access to current and past issues of the journal.

(2) Log into the UF network using VPN and then go to www.buildinggreen.com and click on News to get to the current and previous issues.

COURSE ASSIGNMENTS
The following are the graded assignments for this course:

1. Quizzes: There are 12 Quizzes, one associated with each Module. Once you start a Quiz you have 30 minutes to complete it. (240 points)

2. Assignments: Each module has an Assignment that you must complete, a total of 12 Assignments. These are worth 100 points each.

3. Research Projects: There are two Research Projects, a Mid-Semester Research Project and an End-Semester Research Project

Grading: The final student grade will be a letter grade based on the percentage of the Total Points Achievable. The grades based on the percentage are as follows:
94-100    A
90-93.9    A-
87-89.9    B+
84-86.9    B
80-83.9    B-
77-79.9    C+
74-76.9    C
70-73.9    C-
67-69.9    D+
64-66.9    D
60-63.9    D-
< 60      E

Points Available:
1. Quizzes: 12 x 20 points: 240 points
2. Assignments: 10 x 50 points: 500 points
3. Research Projects: 400 points

TOTAL POINTS: 1140 points

Attendance: There are no mandatory attendance requirements for this course.

Grading Method: Grading will be based foremost on the quality of the written and oral submissions and presentations by the students, to include organization, graphics/models, grammar, spelling, punctuation, originality, and attention to detail.

Instructor:
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Module Theme
Module 1 – Introduction
Module 2 - Defining an Ecology of Construction
Module 3 – Material Circulation, Energy Hierarchy and Building Construction
Module 4 – On Complexity Theory, Exergy, and Industrial Ecology
Module 5 – Applying Ecological Emergence to Design and Construction
Module 6 – Ecological Dynamics and Adaptive Architecture
Module 7 – Minimizing Waste Emissions From the Built Environment
Module 8 – Industrial Ecology and The Built Environment
Module 9 – Construction Ecology and Metabolism I
Module 10 – Construction Ecology and Metabolism II
Module 11 – Ecologic Analogues and Architecture
Module 12 – Semester Research Paper and Presentation