RINKER SCHOOL OF CONSTRUCTION MANAGEMENT
UNIVERSITY OF FLORIDA

PRINCIPLES OF SUSTAINABLE CONSTRUCTION

COURSE NUMBER: *ICM 6680* **NUMBER OF CREDIT HOURS:** *3*

INSTRUCTOR: *Charles J. Kibert (ckibert@ufl.edu)*

COURSE OBJECTIVES

- Understand the concept of sustainable development or sustainability in the built environment.
- Learn about the different sustainability frameworks used worldwide, their strengths and weaknesses.
- Learn about the fundamental resources issues related to the built environment.
- Understand concepts such as New Urbanism, passive design strategies, technologies, ecological principles, and energy conservation measures for efficient buildings.

COURSE DESCRIPTION

This course addresses the application of the sustainable development paradigm to the built environment. Sustainable development includes reducing the impacts of human activities on natural ecosystems and understanding the role these ecosystems have in the economy and on human welfare. It also discusses environmental ethics and environmental justice; ecological / environmental economics including Life Cycle Costing; building assessment (frameworks) and ecolabels. Additionally, this course develops basic knowledge about energy systems, exergy, entropy, energy conservation and renewable energy; Life Cycle Assessment, embodied energy, emergy, and materials. Concepts such as New Urbanism, bioclimatic design principles, ecological concepts, passive design strategies will be discussed. This course will use a mix of class lectures, videos, additional reading materials, and other approaches for instruction.

PREREQUISITE KNOWLEDGE AND SKILLS:

Satisfactory standing as an ICM or BCN student

PURPOSE OF COURSE

This course will introduce the fundamental concepts of sustainable development in the built environment; environmental / resources issues ; and industrial / construction metabolism with examples. The course also addresses environmental ethics and environmental justice; ecological / environmental economics including Life Cycle Costing; building assessment (frameworks) and ecolabels; building health; and the application of Life Cycle Assessment (LCA) as a decision making tool.

COURSE LEARNING OUTCOMES:

Upon completion of the course students will demonstrate their:

- understanding of the application of the sustainable development framework to the design and construction of the built environment
- ability to apply the principles of sustainable construction to decisions regarding the built environment.
- knowledge of life cycle costing, life cycle assessment, net zero strategies, green building assessment systems, and the environmental impacts of the built environment.

COURSE POLICIES

Class Attendance. Attendance at all class meetings is mandatory. Unexcused absences will result in a half letter grade reduction.

Late Assignments. Assignments are due to the instructor by the start of class on the due date. A 40% deduction will be imposed for assignments up to 24 hours late. Assignments more than 24 hours late will receive no credit.

Disruptive Behavior Policy. Students engaging in disruptive behavior will be asked to leave the classroom. Use of cell phones and computers without permission of the instructor is considered disruptive behavior.

Honor Policy. It is Rinker School policy that any incidence of cheating, copying, signing rosters for others, or other attempts to deceive will be penalized by course failure.

General Policies

- There will be no substitutions for assignments
- Writing assignments will be checked using Turnitin software to identify any instance of plagiarism. Any student found guilty of plagiarism will be assigned an "F" for the course. NO appeal. Please make sure you understand what this means and how to avoid it.
- ASSIGNMENTS SUBMITTED AFTER CALLED FOR WILL BE ELIGIBLE FOR HALF CREDIT.
- If you have a conflict with an papers, projects, quiz, presentations, or class assignments, arrangements must be made with the instructor BEFORE the time of the event if there are to be alternate arrangements made (see Makeup Policy above).
- The professor reserves the right to adjust the grade scale. Under no circumstances will a student's grade be lowered by this adjustment.
- For exams and in-class assignments, students are responsible for all material presented in class, all reading assignments, guest lectures, site visits, and handouts distributed in class or via the class website. Questions on exams are not limited to things written on the board, shown as an overhead or part of a slide presentation.

UF POLICIES

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES

Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT

Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php. Although joint work on assignments may be acceptable in some cases, duplication of an assignment, both manually or by computer will be considered an act of academic dishonesty and dealt with accordingly. On all work submitted for credit by students at the university, the following pledge is either required or implied**: "On my honor, I have neither given nor received unauthorized aid in doing this assignment.**"

GETTING HELP

For issues with technical difficulties for E-learning in Canvas, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

GRADING POLICIES

REQUIREMENTS

Each module has a graded Module Assignment for evaluating your interpretation of assigned readings and other activities plus your own personal research into the topic. You will also have two Research papers due at the midpoint and end of the course.

Course papers (2 x 200 pts each)	400 points
Module Assignments (12 X 50 pts each)	600 points
Total Points (max)	**1000 points**

GRADING SCALE:

Grading based on points earned as a percentage of total points. A: 95 and up, A-: 92-94 B+:88-91, B: 83-87, B-: 80-82, C+: 77-79, C: 73-76, C-: 70-72, D+: 67-69, D: 63-66, D-: 60-62, E: 59 or below.

COURSE SCHEDULE

1	**Introduction: Sustainability in the Built Environment**
2	**Environmental / Resources Issues & Industrial / Construction Metabolism**
3	**Ethics of Sustainability and Environmental Justice**
4	**Ecological / Environmental Economics and Life Cycle Costing (LCC)**
5	**Building Assessment and Ecolabels**
6	**Sustainability Frameworks**
7	**Sustainable Communities and Sustainability Indicators**
8	**Energy Systems, Exergy, Entropy, Energy Conservation and Renewable Energy**
9	**Life Cycle Assessment (LCA), Embodied Energy, Emergy and Materials**
10	**Water Resources, Wastewater and Stormwater**
11	**Urban Planning, Land Development, New Urbanism and Landscaping**
12	**Design for the Environment, Ecological Principles, Passive Design and Climatic Design**