Chaminade University
Environmental + Interior Design Program
EID/ENV 384 Sustainability in Design - Fall 2018
Instructor: Ming Hu, M.Arch, PhD

EID/ENV 384 COURSE SYLLABUS

Class hours: Tu/Th 1:00 – 2:20pm

Office hours: Tu 9:00am-9:30am / 1:30pm-2:00pm

Email: ming.hu@chaminade.edu

Catalog Description:
This course examines principles of sustainable design from a systemic perspective, focusing on environmental issues and how they relate to economics, social equity, and human health. Topics in the course include: cradle-to-cradle principles, biomimetic design, passive building design, renewable energy, water and waste, sustainable materials, and indoor environmental quality. Course culminates with a review of applications in the building industry.

Course Format:
This is on-Line course, watching pre-recorded lecture videos (located in Panopto Recording). Timing of lectures therefore has some flexibility. There are typically two lectures per each week, I will send out the weekly announcement to remind you at every Monday. The flexible framework does not require you to be in a specific location or specific time to watch the lecture. However, the online nature of this class will push you to take an active role in the learning process.

Every week there will be a **videoconference** for student to ask questions and to go over key points of the prior week's lecture (if needed). Video-conferences will use Zoom, and time is Tuesday 1:30pm -2:00pm, starts from August 23rd, end at November 29th. The video-conference times varies depending on the questions you have. At the scheduled time of the Videoconference, you should be able to enter **ZOOM** via the Canvas website where it says " **Web Meeting** "

All homework must be complete and submitted on time, unless otherwise arranged. Any unexcused late submissions will be marked down by one letter grade.

At the end of the semester, students will have the option to either present a design project from a previous or current studio that has been reconsidered in a sustainable design context, integrating the technologies, principles, practices, etc., they have learned about in the course; or write an in-depth (4000 word) research paper on a topic of your choice (to be approved by instructor). The student may propose other alternatives for a final project, such as building (or inventing) a sustainable technology.

REQUIRED TEXT:
Heating, Cooling, Lighting: Sustainable Design Methods for Architects (Fourth Edition), Norbert Lechner (PDF on Canvas)
Building Systems for Interior Designers (Second Edition), Corky Binggeli [PDF format on Canvas]

GRADING:

Assignment	Percentage %
Homework (3)	**70%**

Final Project	**30%**
Total	**100%**

Grade Calculation:
A = 90-100%
B = 80-89%
C = 70-79%
D = 65-69%
F = below 65%

Refer to CUH Student Handbook for mandatory adherence to the following policies:

- **Academic Honesty**
- **ADA Accommodation**
- **Title IX Compliance**
- **E+ID Professional Code of Conduct**

Course Outcomes:
Student work will be assessed by evidence of achievement in the following course outcomes. In the first half of the course—which will establish a theoretical foundation in the field—students should be able to:

- **Environmental Factors -** Identify the historical, sociopolitical, and economic factors that have contributed to the global environmental crisis we find ourselves at present.
  [CIDA 4, 10] [PO3] – EMERGING

- **Concepts & Principles -** Describe the concepts, principles, and theories of sustainability, and how they pertain to human welfare and the building industry.
  [CIDA 7] [PO3,4] - EMERGING

- **Industry Impacts -** Recognize how the fields of environmental and interior design have been influenced by, and in turn can help advance, the goals of the sustainability movement. [CIDA 6, 13, 14] [PO1] – DEVELOPING

EID 384 COURSE SCHEDULE (tentative)

Week	Date	Topic	Reading Assignment & Due Date
MODULE I: OVERVIEW			
Week #01:	Tu 8/23	Lecture 1: Introduction	Chapter 1
	Th 8/25	Lecture 2: Basic Principles (HW1 open)	Chapter 3
Week #02:	Tu 8/30	Lecture 3: Thermal comfort	Chapter 4
	Tu 9/01	Lecture 4: Climate	Chapter 5
Week #03:	Tu 9/06	Lecture 5: Bioclimatic design (guest lecture)	Chapter 2
	Th 9/08	Lecture 6: High-performance design (guest lecture)	
Week #04	Tu 9/13	Homework 1 (no lecture)	
	Th 9/15	Homework 1 (no lecture)	HW1 due
MODULE II: DESIGN APPROACHES (BUILDING)			
Week #05	Tu 9/20	Lecture 7: Solar Geometry (HW2 open)	Chapter 6

	Th 9/22	Lecture 8: Passive heating	Chapter 7
Week #06	Tu 9/27	Lecture 9a: Perfect Wall (guest lecture) Lecture 9ab: Whole Wall R-value Calc (guest lecture)	Chapter 15
	Th 9/29	Lecture 10: Passive cooling I	Chapter 7
Week #07	Tu 10/04	Lecture 11: Passive cooling II	
	Th 10/06	Lecture 12: Net Zero Building Overview	
Week #08	Tu 10/11	Lecture 13: Embodied carbon overview	Assigned paper
	Th 10/13	Homework 2 working time (no lecture)	
Week #09	Tu 10/18	Homework 2 working time (no lecture)	HW2 due
	Th 10/20	Lecture 14: Measuring Embodied carbon (guest lecture)	Assigned paper
Week #09	Tu 10/18	Lecture 15: Living building challenge	
	Th 10/20	Lecture 16: James Clark Hall Design (guest lecture)	Assigned paper
Week #10	Tu 10/25	Homework 3 (no lecture)	
	Th 10/31	Homework 3 (no lecture)	
MODULE III: SYSTEMATIC APPROACHES (URBAN + BUILDING)			
Week #11	Tu 11/01	Lecture 17: Life cycle consideration	Assigned paper
	Th 11/03	Lecture 18: Case One (Germany)	Assigned paper
Week #12	Tu 11/08	Lecture 19: Case Two (US)	Assigned paper
	Th 11/10	Lecture 20: Case Three (China)	HW3 due
Week #13	Tu 11/15	**Final project assignment**	
	Th 11/17	Work week (no lecture)	
Week #14	Tu 11/22	Work week (no lecture)	
	Th 11/24	Thanksgiving [holiday]	
Week #15	Tu 11/29	Work week (no lecture)	
Week #16			Final project due

Required Texts:

Heating, Cooling, Lighting. Design Methods for Architects, Norbert Lechner (PDF on Canvas