

| <b>IND 3468</b> | <b>Interior Environmental Technologies</b>   | <b>Fall 2016</b>   |
|-----------------|--|--------------------|
| Class           | TR, Periods 9 - 10 (4:05 - 6:00), 3 credits  | ARCH. 213          |
| Instructor      | Julie Emminger                               | jcemminger@ufl.edu |
| Office Hours    | TR, 12:50 p.m. to 1:40 p.m. (By appointment) | ARCH. 313          |

### **Course Description**

Interior Environmental Technologies will introduce students to the theoretical and practical relationships among people, technology and buildings relative to the thermal and visual environment, heating and air-conditioning systems, energy power + electric distribution, environmental quality and sustainability issues, water supply systems, waste disposal systems and life safety systems.

### **Course Goals**

The primary goal of this course is to give students an exposure to the various relationships among people, technology, and the environments in which people dwell. The importance of the different relationships developed through building among people and their sensory environments will be examined in various situations. Issues will be raised on a theoretical level regarding buildings and environmental issues that students should be familiar with as they develop an interior architectural philosophy. The needs for environmental control systems based on the reactions of people to dynamic, changing environments (such as heat, light, sound, etc.) will be investigated for each of the sensory systems. A secondary goal of this course is to familiarize students with the vocabulary and concepts involved in the design of the various levels of environmental control used by designers. It is hoped that students will exhibit an awareness of these concepts in their current and future design studios.

### **Course Objectives**

In accordance with the Council for Interior Design Accreditation Professional Standards 2014, this course will help students:

- Demonstrate understanding of the concepts, principles, and theories of sustainability as they pertain to building methods, materials, systems, and occupants. (CIDA standards 2a)
- Understand the principles of natural and electrical lighting design. (CIDA standards 12a)
- Understand the principles of acoustical design and appropriate strategies for acoustical control. (CIDA standards 12c, 12d)
- Understand the principles of thermal design and how thermal systems impact interior design solutions. (CIDA standards 12e, 12f)
- Understand the principles of indoor air quality and how the selection and

application of products and systems impact indoor air quality. (CIDA standards 12g, 12h)

- Demonstrate understanding that design solutions affect and are impacted by distribution systems including power, mechanical, HVAC, data/voice telecommunications, and plumbing. (CIDA standards 13c)
- Demonstrate understanding that design solutions affect and are impacted by energy, security, and building controls systems. (CIDA standards 13d)
- Demonstrate understanding that design solutions affect and are impacted by vertical circulation systems. (CIDA standards 13f)▪ Students have awareness of sustainability guidelines (LEED, CHPS, Energy Policy Act 2005, and California 01350). (CIDA standards 14a)
- Demonstrate understanding of laws, codes, and standards that impact fire and life safety. (CIDA standards 14c, 14d, 14e, 14f)
- Have awareness of team-based work structures and dynamics, and awareness of the nature and value of integrated design practices. (CIDA Standards 5a, 5b)
- Express ideas clearly in oral and written communication. (CIDA standard 6b, 6c)

### **Required Text**

Corky Binggeli (2016). *Building Systems for Interior Designers*. 3rd Edition. New Jersey: John Wiley & Sons.

### **Recommended Texts**

- Norbert Lechner (2009). *Heating Cooling and Lighting Design Methods for Architects*. New York: John Wiley & Sons. <http://www.loc.gov/catdir/toc/onix02/00033008.html>
- Benjamin Stein, John S. Reynolds, Walter T. Grondzik and Alison Kwok (2006). *Mechanical & Electrical Equipment for Buildings 10th Ed*. New York: John Wiley & Sons. <http://www.loc.gov/catdir/toc/onix02/96006186.html>
- Nick Baker & Koen Steemers (2000). *Energy and environment in architecture: a technical design guide*. New York: E&FN Spon.
- Harmon, Sharon Koomen (2003). *The Coded Guidebook for Interiors*. John Wiley & Sons.

### **Canvas**

Course information, support materials, and grades are accessed on the course web page in the [UF CANVAS e-learning system](#). From there you can log in to your student CANVAS dashboard. **Any technical problems should be directed to UF Computer Help.**

### **Course Organization**

Instructional activities will include lectures, class discussions and presentation, readings, class exercises, exams, field trip(s), and assignments that relate to your class lectures. It is important that you are prepared to contribute to discussions related to the assigned readings. Exams will cover lecture materials, reading assignments, and contexts of group presentation. These exams are intended to assess your understanding of the course content and challenge application of material. In-class exercises will provide you with the opportunity to apply material learned during lectures. There will be 10 assignments given in the sustainable design principles in the context of environmental design. Any assignments turned in for a grade must be the sole work of the author.

**Assignments must be uploaded to the UF CANVAS e-learning system on the due date in PowerPoint format (Your last name \_ Assignment #.ppt).**

### **Course Evaluation**

|                                |      |
|--------------------------------|------|
| Exam One                       | 20%  |
| Exam Two                       | 20%  |
| Exam Three                     | 20%  |
| Class Presentation + Exercises | 20%  |
| Assignments                    | 20%  |
| Final Grade                    | 100% |

### **Grading Scale**

|                    |                    |
|--------------------|--------------------|
| A = 93–100% 4.0    | C = 73–76.9% 2.0   |
| A- = 90–92.9% 3.67 | C- = 70–72.9% 1.67 |
| B+ = 87–89.9% 3.33 | D+ = 67–69.9% 1.33 |
| B = 83–86.9% 3.0   | D = 63–66.9% 1.0   |
| B- = 80–82.9% 2.67 | D- = 60–62.9% 0.67 |
| C+ = 77–79.9% 2.33 | E = 0–59.9% 0.0    |

### **Course Requirements + Expectations**

Students must complete the stated requirements for each design project plus all the associated tasks assigned by their instructors on the respective due dates and times.

**Students are also required to do the following:**

- Attend class and have text book, and work at each class period
- Complete daily assignments, work on projects outside of class time, arrive at each class period prepared for class activities and for participation in them
- Seek critiques from faculty and students on a consistent and regular schedule o Work quietly and respect the privacy and property of fellow students at all times
- Keep work organized and documented
- Inform the instructors if you are going to miss a class for any reason

***Electronic devices may be used for class work. Mobile phones must be turned off or muted. Students who receive or make calls OR text messages will be asked to leave and 5 points will be deducted from the final grade.***

### **Attendance**

Student participation is a main component of this course. In order to get the best results possible, everyone should attend all classes and participate with respect and consideration for classmates. Students must be present and working on studio assignments during scheduled studio hours. Instructors should be notified in advance in person or by email of any necessary absence.

***Two absences will be tolerated without penalty. Each additional absence will result in the reduction of your course grade by one letter grade. If you have more than six absences you will automatically fail the course.***

### **Late assignments**

All assignments—complete or incomplete—must be turned in on the due date and will be graded as they stand. Students who seek an alternative to this rule must attain permission from instructors prior to the due date. The projects will be evaluated based on what is turned in at that time.

**No unexcused late project will be accepted. The late project will be given a failing grade. No late projects will be reviewed. Students who are not present for the critique will receive a failing grade.**

### **Student Accommodations**

Students requesting classroom accommodation must first register with the Disability Resource Center at University of Florida Dean of Students Office, see <http://handbook.aa.ufl.edu/policies.aspx>. The Dean of Students Office will review the case and, if appropriate, provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

### **Academic Integrity and the UF Honor Code**

All students at the University of Florida are expected to adhere fully to [University of Florida Student Honor Code](#). The Honor Code outlines the expectations for student conduct in regard to academic honesty. All students should review this policy to understand the range and scope of the standards and the seriousness of any infractions of the code. The policy places full responsibility on students to know and adhere to these standards for academic integrity. All examinations, quizzes, design projects, and assignments in the Department of Interior Design are subject to this policy. Maintaining strict academic integrity is a priority of the Department of Interior Design and all instructors will fully enforce the UF Honor Code in their studios and classes. A strict adherence to the Honor Code is expected by the University of Florida and reflects the ethical standards of the interior design profession.

### *Notes*

*\* The instructor reserves the right to make changes in the course schedule and syllabus as required to facilitate learning. Adjustments will be made when necessary and according to the professional judgment of the instructor.*

*\* All work produced is property of the Department of Interior Design. Instructor will keep samples of student work. Students are advised to document work before collection.*

## COURSE SCHEDULE

| AUGUST     |  |   |
|------------|--|---|
| WEEK<br>1  | <b>23</b><br>Course Overview   | <b>25 (Due: Profile)</b><br>The Big Picture + Environment & Energy,<br>Reading: Ch.1                              |
| WEEK<br>2  | <b>30 (A1 Due: Sustainable design + LEED)</b><br><u>Group 1: Sustainable design + LEED</u><br>Reading: Ch.2          | <b>01</b><br>Sustainable design + LEED<br><u>Group 2: UF LEED Building Analysis</u>                               |
| SEPTEMBER  |  |   |
| WEEK<br>3  | <b>06 (A2 Due: Thermal comfort + systems)</b><br>Thermal Comfort<br>Reading: Ch.9, Ch.11                             | <b>08</b><br><u>Group 3: Thermal Comfort</u><br>Reading: Ch.9, Ch.11  |
| WEEK<br>4  | <b>13 (A3 Due: Indoor Air Quality)</b><br><u>Group 4: Indoor Air Quality</u><br>Reading: Ch.10                       | <b>15 (A4 Due: Vertical Circulation Systems)</b><br><u>Group 5: Vertical Circulation Systems</u><br>Reading: Ch.5 |
| WEEK<br>5  | <b>20</b><br>EXAM #1 review  | <b>22</b><br><b>EXAM #1</b>   |
| WEEK<br>6  | <b>27 (A5 Due: Sustainability &amp; Lighting)</b><br><u>Group 6: Sustainability &amp; Lighting</u><br>Reading: Ch.13 | <b>29</b><br>Electrical Systems<br>Reading: Ch.12   |
| OCTOBER    |  |   |
| WEEK<br>7  | <b>04 (A6 Due: Electrical Systems)</b><br><u>Group 7: Electrical Systems</u><br>Reading: Ch.12                       | <b>06</b><br>Electrical Design and Plan   |
| WEEK<br>8  | <b>11</b><br>Electrical Design and Plan  | <b>13 (A7 Due: Communication Systems)</b><br><u>Group 8: Communication Systems</u><br>Reading: Ch.14              |
| WEEK<br>9  | <b>18</b><br>EXAM #2 review  | <b>20</b><br><b>EXAM #2</b>   |
| WEEK<br>10 | <b>25</b><br>Water & Wastes<br>Reading: Ch.6, Ch.7, Ch.8   | <b>27 (A8 Due: Water &amp; Wastes)</b><br><u>Group 9: Water &amp; Wastes</u><br>Reading: Ch.6, Ch.7, Ch.8         |

*Schedule continues on next page*

## COURSE SCHEDULE

| NOVEMBER   |   |  |
|------------|---|--|
| WEEK<br>11 | <b>01(A9 Due: Fire Safety)</b><br><i>Group 10: Fire Safety</i><br>Reading: Ch.15, Ch.16 | <b>03</b><br>Fire Safety Exercise<br>Reading: Ch.15, Ch.16       |
| WEEK<br>12 | <b>08 (Exercise Due: Fire Safety)</b><br>Fire Safety Exercise                           | <b>10</b><br>Fire Safety Exercise                                |
| WEEK<br>13 | <b>15 (A10 Due: Acoustics)</b><br>Acoustics<br>Reading: Ch.19, Ch.20                    | <b>17</b><br><i>Group 11: Acoustics</i><br>Reading: Ch.17, Ch.18 |
| WEEK<br>14 | <b>22</b><br><b>No class (Thanksgiving)</b>   | <b>24</b><br><b>No class (Thanksgiving)</b>                      |
| WEEK<br>15 | <b>29</b><br>EXAM #3 review   | <b>01</b><br><b>EXAM #3</b>                                      |
| DECEMBER   |   |  |
| WEEK<br>16 | <b>06 (A11 Due: whole topics)</b><br><b>Final Project with TOC via Canvas</b>           | <b>8 READING DAY</b>   |