

# Interior Architecture

Ohio University

College of Fine Art

School of Art+Design

**ART 2640**, Building Systems of Interior Environments

Fall Semester 2020

Tuesdays & Thursdays 10:30-11:50

Online

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"Athens Depot" photo by Matt Ziff



"Green Window" photo by Matt Ziff

## Course Syllabus

**Course:** ART 2640

**Call #:** 3688

**Credit Hours:** 3

**Meeting Time:** TTH, 10:30am - 11:50am

**Location:** Online

## Course Description

Study of interior building systems, addressing fundamental concepts and applications of HVAC (heating ventilating and air conditioning), plumbing, illumination, electrical, acoustics, transportation, and ceiling systems in interior environments. Examination of fundamental aspects of human vision as it affects perception and function in interiors, including aspects of quantity of light, color, tasks, and quality of light. Terminology, symbols, concepts, basic equations, and lighting calculations included. Exploration of light sources and controls. Study of physiological and psychological considerations.

## Attendance

***This online class is being conducted as a synchronous academic class. This means that we will be meeting, via Microsoft Teams video conference software at 10:30-11:50am every Tuesday and Thursday morning. This is a good thing! We will actually be 'together' and will experience discussion and presentations live, in real time, together.***

Attendance of the course is required. There are no 'excused' or 'unexcused' absences; missing class is missing class.

**You are allowed two (2) absences, for any reason, of class periods without effect on your course grade.**

Each absence beyond two (2) will result in a two-thirds (2/3) letter grade reduction in your total course grade. (The course grade will be lowered two steps in the traditional grading metric: A A- B+ B B- C+ C C- D+ D D- F

Absence from eight (8) or more classes will result in an automatic failing grade for the course. In the event of extreme medical or other situations a grade of WP or WF will be given for the course grade if eight (8) or more classes have been missed.

To meet attendance policies students must:

- Show up for class on time in the Teams online format.
- Be engaged in scheduled class activities for the entire class period.
- Stay in class for the entire period.
- If a student needs to complete class activities in a remote location they must receive permission from the instructor prior to leaving class.
- The instructor will fill in an attendance sheet each class period.
- If a student does not meet the above policies they will be counted absent.

Only absences due to official Ohio University required functions or illness or emergency in the immediate family will be considered by the instructor for possible extensions, excuse, or make up.

Students must be prepared to provide evidence to the reason of the absence if they desire to have extended due dates or to make up work.

It is the sole responsibility of the student to acquire assignments, gather class notes, or find similar information due to an absence of any reason.

In the unusual circumstance of the instructor not being present at the beginning of the class period students are to use the time in class as a work period. Another faculty member may be contacted to take attendance.

## **Academic Integrity**

You are strongly advised to review the University's policies on dishonest scholastic work.

These policies place full responsibility on the student for the content and integrity of all work submitted.

The issue of integrity is a priority in the Interior Architecture program and is a matter that is the basis of the ethical standards of all design professions.

All Ohio University policies and procedures for academic integrity are in full effect within this course.

## **Course Objectives**

To understand and be able to apply fundamental concepts involving the systems and components of those systems used in architectural interiors, including HVAC, electrical, plumbing, ceilings, acoustics, transportation, and interior lighting.

To understand and be able to apply fundamental concepts in lighting interior environments using both day lighting and electrical lighting.

To understand current applications of lighting elements and fixtures in interior design professional practice.

To apply terminology used in lighting design.

To understand how to evaluate the lighting characteristics of an interior environment.

To implement critical thinking and intellectual thought as an essential aspect of the act of lighting designing.

## **In this course students will become knowledgeable about**

- Fundamental characteristics of plumbing and electrical systems as they impact interior environments.
- Fundamental characteristics of HVAC systems as they impact interior environments.
- Environmental issues and ideas related to lighting, electrical, plumbing and HVAC systems as they impact interior environments.
- Acoustics as an interior environmental condition that can be modulated through informed selections and design strategies.
- How light is seen and perceived through the human eye and brain.
- Psychological and emotional impact of light.
- How surface finish and reflectance affect brightness.
- Variations of color temperature and color rendering.
- Various lamp and fixture types.

- Quantitative measurement of light.
- Electrical distribution and control systems as related to lighting.
- Standard means of communicating lighting design through reflected ceiling plans and fixture schedule.
- Students learn professional communication through the means of reflected ceiling plans and fixture schedules.
- Industry-specific vocabulary and the development of written and graphic communication.

## **Topics to be Covered**

- Mechanical systems (HVAC)
- Electricity and electrical systems
- Plumbing systems
- Transportation systems (stairs, escalators, elevators)
- Acoustics as it impacts interior environments
- Perception of light
- Psychology of light
- Brightness
- Color
- Day lighting and Solar Design
- Incandescent lamps
- Discharge lamps
- Auxiliary equipment
- Light control
- Photo metrics and photometric data
- Luminaries
- Design issues

- Reflected ceiling plans and schedules
- Plumbing systems
- Ceiling systems
- HVAC systems
- Electrical systems
- Transportation systems (elevators, escalators, stairs, ramps)

## **Required Items**

### **Textbooks:**

- "Fundamentals of Lighting", Second Edition, by Susan Winchip
- "Building Systems for Interior Designers" by Corky Binggeli
  
- Sketchbook: A blank paper sketchbook, no smaller than 6" x 9" and no larger than 11" x 14".
- Students are encouraged to use the internet for the research and completion of assignments.
- Scientific Calculator (Required for every class session.)
- 3" Three Ring Binder - Students are responsible for keeping all class notes, readings, handouts, reference materials and manufacturers information in the binder. The binder is required for each class session. (Students will turn in the binder at the final exam.) Students are to keep copies of all homework and projects in the three ring binder.

## **Course Assignments**

HVAC System Documentation

Electrical System Documentation

Plumbing System Documentation

Elevator Systems  
Acoustics Assessment  
Identifying Lamps  
Identifying Luminaires  
Lumen Method Calculations  
Luminaire Design  
Comprehensive Lighting Design Project

### Assignments and Grading Policy:

Assignments: 80 %  
Class Participation: 20 %

Grading: All project grades will be assessed on a scale of 0-100.

The grading scale is as follows:

#### Grading Percentage Breakdown

93-100 = A  
90-92 = A-  
87-89 = B+  
83-86 = B  
80-82 = B-  
77-79 = C+  
73-76 = C  
70-72 = C-  
67-69 = D+  
63-66 = D  
60-62 = D-  
59 and below = F

**A-** Excellent. Indicates work of very high character; the highest grade given. This grade is earned through work that shows significant insight and understanding of addressed topics, high quality of produced assignments and other required elements of topics addressed.

**B-** Good. Indicates work that is above average, though not of the highest quality, not excellent. This work shows good exploration and development, and is presented with good craftsmanship, but does not rise to the level of excellence.

**C- Fair.** Indicates work of average or medium character. Work in this category demonstrates minimal fulfillment of the stated requirements and an understanding of the issues covered, but does not show thorough or sophisticated understanding, development, or execution.

**D- Pass.** Indicate work below average and broadly unsatisfactory. The lowest passing grade. Though work may meet the minimum requirements, it lacks depth, sophistication, development or is unsatisfactorily crafted.

**F- Fail.** Work indicates that the student knows so little of the subject that it must be repeated in order that credit may be received. Work in this category may be unfinished, unimaginative, underdeveloped or poorly executed, and shows minimal understanding of issues.

## **Mid-Term Exam**

**Tuesday, October 13: 10:30am**

## **Final Exam**

**Final Exam Session: Presentation & Critique of 'Luminaire Project':**

**Tuesday, December 8: 10:10am -12:10pm: Online**

The time listed is set by Ohio University and may not be changed.

## **Ohio University Final Exam Policy**

- I, faculty, may not change final exam times.
- The university establishes a final exam schedule in order to preserve an orderly and non-conflicting final exam experience for every student.
- A final exam or other 'summative experience' is required to be held for every course at Ohio University.
- A final exam may not be given on the last day of class.