ID A210: FUNDAMENTALS OF LIGHTING

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	130200 - Interior Design and Merchandising
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)

Course Description

The fundamentals of lighting, design, theory, and application including color and vision, incandescent and fluorescent lamps, lighting techniques for interior designers, codes, and energy efficient lighting practices. PREREQUISITE: ID A100 and ID A110. ADVISORY: ID A170. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Identify and apply basic lighting techniques to interior environments.
2. Differentiate among and use the basic categories of lighting.
3. Recognize and apply the energy conservation codes.

Course Objectives

- 1. Use the basic terminology of lighting design.
- 2. List the advantages and disadvantages of incandescent lighting and fluorescent lighting.
- 3. Compare the function (use) of general, task, decorative, and safety lighting.
- 4. Select and identify the appropriate size and shape of lamps using the criteria of beam spread, distance, brightness and lumens.
- 5. Identify and apply lighting techniques to classroom exercises/ projects. The lighting technique will include down lights, wall washing, track lighting, wall grazing, silhouetting, and beam play.
- 6. Demonstrate how electrical power is brought into the interior space.
- 7. Identify the standard parts to a lamp and luminaries.
- 8. Identify codes applicable to energy conservation and lighting design,

Lecture Content

Lighting Terminology Lighting Symbols Electrical Drawing Symbols Vision and Perception Types of Lighting (General, Accent, Task, Daylight) Types of Incandescent Fluorescent Lamps In-House Lighting Lab CRI and Kelvin Comparisons Residential T-24 Lighting Catalog Cut Sheets Types of Down lights (In-House Lighting Lab) Techniques to Layout Down lights Complete a Lighting Fixture Schedule Field Trip to a Lighting Laboratory Accent Lighting Techniques Techniques to Layout Framing Projectors Photometric Data Use of a Photometer Commercial T-24 Energy Codes Techniques of Wall-washer layouts Zonal Cavity Calculations for commercial spaces Advanced Switching and Lighting Controls Basic Electrical Information Understand how power gets to a building Branch circuit lighting loads safety Single Line Diagram Design Applications for Restaurant Retail Final Student Project Presentations

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)

Instructional Techniques

Lecture, demonstration, laboratory, critique (instructor/student), multi-media, research, and student presentation.

Reading Assignments

Students will be expected to complete reading assignments from the required text, printed hand-outs, library resources, and research online articles throughout the course. 3 hours/week

Writing Assignments

Lamp Reference Guide. Research characteristics and technical data of commonly used lamps. (8 hours) Residential Lighting Project. Design a lighting system using several lighting techniques learned in class. (18 hours) Commercial Lighting Project. Design a lighting system based on current lighting practices utilizing zonal cavity calculations and energy efficiency codes. (18 hours) Lighting Notebook. Compile a notebook showing examples of the lighting techniques learned in class. (8 hours)

Out-of-class Assignments

Students will perform additional research and complete a series of presentations and projects throughout the course. Out of Class assignments are used to improve skills and knowledge to be applied to projects and assignments. Weekly reading assignments 3 hours Revision of lab assignments/projects 1 hours/week Create portfolio of semester work Preparation for quizzes 1/2 hour/week

Demonstration of Critical Thinking

Student projects, class presentations, research, examinations, student participation, and attendance.

Required Writing, Problem Solving, Skills Demonstration

Lamp Reference Guide. Research characteristics and technical data of commonly used lamps. Residential Lighting Project. Design a lighting system using several lighting techniques learned in class. Commercial Lighting Project. Design a lighting system based on current lighting practices utilizing zonal cavity calculations and energy efficiency codes. Lighting Notebook. Compile a notebook showing examples of the lighting techniques learned in class.

Eligible Disciplines

Interior design: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Russell, S.. The Architecture of Light - Architectural Lighting Design Concepts and Techniques: A Textbook of Procedures and

Practices for the Architect, Interior Designer and Lighting Designer, 2nd ed. Conceptnine, 2012 Rationale: .