

Las Positas College
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Course Outline for INTD 30
FUNDAMENTALS OF LIGHTING
Effective: Fall 2018

I. CATALOG DESCRIPTION:

INTD 30 — FUNDAMENTALS OF LIGHTING — 3.00 units

Residential and commercial lighting systems as they apply to what constitutes a well-lit interior space. Includes an investigation of current lighting types and lighting resources.

3.00 Units Lecture

Grading Methods:

Letter or P/NP

Discipline:

- Interior Design

	MIN
Lecture Hours:	54.00
Total Hours:	54.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

- A. evaluate existing commercial and residential lighting installations;
- B. design a lighting system for a residential and commercial establishment using drafting equipment;
- C. read an electrical plan for residential and commercial establishments;
- D. recognize lighting organizations which encourage advancing lighting knowledge including Designers Lighting Forum and Illuminating Engineering Society; International Association of Lighting Designers;
- E. be aware of local sources for obtaining further lighting knowledge and products;
- F. develop a lighting proposal for a client.

V. CONTENT:

- A. Lighting terminology
- B. Elements of design as applied to lighting
- C. Color rendering with artificial and natural light
- D. How direct, indirect, task, ambient, general, specific, and accent light relate
- E. The function of various types of luminaires
- F. Residential lighting
- G. Commercial lighting including store, restaurant, or beauty salon examples
- H. The effect of Title 24 on lighting design
 - I. How to draw reflected ceiling plans including the use of electrical symbols and lettering
- J. Lighting documents
- K. Special lighting needs, including using a computer
- L. Lighting manufacturers and resources
- M. Landscape lighting
- N. Light as art

VI. METHODS OF INSTRUCTION:

- A. **Lecture** -
- B. **Field Trips** - to local Lighting Showroom
- C. Slides and Videos
- D. **Guest Lecturers** -

VII. TYPICAL ASSIGNMENTS:

- A. Lighting composition
 - 1. Photograph an item under 6 different lighting conditions
 - a. Observe effects of shadows, highlights, color changes
 - b. Mount on dark board
 - c. Identify each scenario
 - d. Share with class.
- B. Effects of lighting color

1. Select and arrange on white paper, paint chips from 3 different family hues. Observe each under 2 different types of light sources
 - a. Identify light sources and describe effects on each group
 - b. Submit results and personal response.
- C. Lighting calculations
 1. Demonstrate the ability to perform calculations to achieve desired light quality in an interior.
- D. Create a reflected ceiling plan showing location of architectural luminaires, circuitry paths and controls.
- E. Research manufacturers' catalogues for 3 specific lamp types
 1. Compare ease of use and information given by 2 manufacturers for each lamp type. Submit information in a report.

VIII. EVALUATION:

A. **Methods**

1. Exams/Tests
2. Quizzes
3. Projects
4. Field Trips
5. Class Work
6. Home Work

B. **Frequency**

1. Exams - Midterm and final, one per semester
2. Quizzes - Minimum 4 tests through semester
3. Projects - 3 - 6 over the course
4. Field trips - 1 - 3 per semester
5. Class work - weekly
6. Homework - weekly

IX. TYPICAL TEXTS:

1. Winchip, Susan. *Fundamentals of Lighting*. 3rd ed., Fairchild, 2017.
2. Karlen, Mark , James Benya, and Christina Spangler. *Lighting Design Basics*. 3rd ed., Wiley, 2017.
3. Cadena , Richard. *Automated Lighting: The Art and Science of Moving and Color-Changing Lights*. 3rd ed., Focal Press, 2017.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Drafting equipment