

Principles of Lighting

INDES 391

INSTRUCTOR

Mark Ward
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 206.274.8020

PREREQUISITES

INDES 160 & INDES 190

MEETS

Monday afternoons 5:30 - 8:50pm
 Room B204

PURPOSE

This course provides a practical introduction to lighting design fundamentals and their relationship to the study and practice of interior design. We will examine quantitative and qualitative aspects of the integration of light into the built environment through lectures, field trips, lighting calculations, and design exercises. Specific topics include: lighting concept development, physics and perception of light, layering light, daylighting, lamps, luminaires, photometrics, lighting calculations, directing & controlling light, lighting graphics & submittals (RCPs, lighting plans, cut sheets & schedules), lighting design principals, energy conservation and energy codes.

This course will primarily be taught from the lecture materials, in-class exercises, assigned readings from required textbooks, with supplemental material added from alternate sources as needed. Exams will be based on material discussed in class, assigned readings, and field trip content. The final project for this course will involve designing lighting for your current (or past) studio project.

The ultimate goals of this course are for students to be able to be able to gain fluency in the vocabulary of light, develop sensitivity to the many aspects of light, learn to develop a visual design intent with light, and develop the practical skill set to examine the requirements necessary to realize that design intent.

COURSE LEARNING OUTCOMES

Students participating in this course will:

- Experience critical, analytical and strategic thinking to solve interior (lighting) design problems.
- Apply a variety of lighting communication techniques and technologies appropriate to a range of purposes and audiences.
- Understand the interaction of light and color and the impact they have on one another and interior environments.
- Gain understanding of the principles of natural and electrical lighting design.
- Competently select and apply luminaires and light sources.
- Learn sustainability guidelines for efficient lighting design and apply industry-specific regulations.
- Be exposed to a broad range of (lighting) materials and products, including those used for sustainability.

After successful completion of this course, the student will:

- Demonstrate the ability to explain, with lighting vocabulary, the lighting design process and apply these concepts by analyzing and solving interior design problems through successful completion of assignments and exam questions.
- Demonstrate a basic understanding of lighting and color fundamentals through successful completion of assignments and exam questions.
- Demonstrate the ability to select and apply lighting elements of interior design through successful completion of assignments and exam questions.
- Demonstrate the ability to creating a lighting design by drafting a lighting or reflected ceiling plan to communicate the lighting design intent.
- Demonstrate the ability to apply appropriate materials and products based on their properties and performance criteria, including environmental attributes and life cycle cost through successful completion of assignments and exam questions.

REQUIRED COURSE TEXTBOOK AND SUPPLIES

The Architecture of Light

by Sage Russell

buy it tonight on Amazon.com

Fundamentals of Lighting

by Susan Winchip

buy it tonight on Amazon.com

Various drafting supplies, paper & colored pencils

A computer, printer, scanner & access to the internet

Camera, or access to one.

COURSE EVALUATION

LETTER GRADE PERCENTAGE

A 94% – 100%

A- 90% – 93%

B+ 87% – 89%

B 84% – 86%

B- 80% – 83%

C+ 77% – 79%

C 74% – 76%

C- 70% – 73%

D 64% – 66%

D- 60% – 63%

F Below 60%

Each student will come to the class with a certain skill set, hopefully you will leave with a considerably larger one. Grades for this course will be based on attendance and participation, completion of various assignments throughout the quarter, a mid-term exam, and your final project.

This is a professional program that demands a professional attitude. Your attendance is mandatory. You should be on time for class, as it shows respect for yourself and fellow classmates. Attendance will be taken at the beginning of class with a sign-in sheet, you are responsible to sign-in at the beginning of each class period.

Late assignments will not be accepted, graded, or commented upon.

If you are experiencing an emergency situation that prevents you from turning in your work, it is your responsibility to notify me ASAP to make an alternate arrangement. Assignments are due by the specified due date & time.

Professional presentation & neatness count.

All work must be neat and organized with great attention paid to workmanship and details. Points will be deducted for messiness.

It is your responsibility to let me know if you need extra help understanding a concept or assignment. Anyone struggling with this course should see me as soon as possible.

No incomplete grades will be given at the end of the quarter. You must earn a C- or better to pass this course and meet department standards. Students cannot pass this course without attending/participating in class, submitting all assigned homework & passing exams.

Should you choose to withdraw from this class at any point, please make sure you are aware of the add/drop deadlines. Failure to properly withdraw from the course will result in the issue of a failing grade if your name still appears on the grade roster at the end of the quarter.

ACADEMIC HONESTY

The principle of academic honesty underlies all that we do and applies to all courses at Bellevue College. One kind of academic dishonesty is plagiarism, which may take many forms, including, but not limited to, using a paper written by someone else, using printed sources word-for-word without proper documentation, and paraphrasing or summarizing the ideas of others without acknowledging the source as well as submitting work from a prior class. Plagiarism can also occur when non-written ideas are taken without documentation -- using someone else's design or

performance idea, for example. In short, plagiarism amounts to intellectual theft- -whether or not it was your intention to steal.

Participating in academic dishonesty in any way, will result in severe penalties. Dishonestly produced student-work will automatically receive a grade of "F" without the possibility of make-up. The Dean of Student Services will also be notified of such conduct.

STUDENT WORK COLLECTION FOR CIDA

Bellevue College Interior Design Department reserves the right to collect and keep student work as a part of our ongoing program development and accreditation requirements. Effective fall quarter 2010, faculty will retain selected student work in all courses within the Interior Design curriculum in order to prepare for our next CIDA site visit.

We thank you for cooperating with the faculty, and hope you understand it is an honor to have your work held to represent our program.

ACCOMMODATIONS

The Disability Resource Center serves students with a wide array of learning challenges and disabilities. If you are a student who has a disability or learning challenge for which you have documentation or have seen someone for treatment and if you feel you may need accommodations in order to be successful in college, please contact us as soon as possible.

If you are a person who requires assistance in case of an emergency situation, such as a fire, earthquake, etc, please meet with your individual instructors to develop a safety plan within the first week of the quarter.

MISCELLANEOUS

Please read

Student Procedures and Expectations at <http://bellevuecollege.edu/artshum/studentinfo.asp>.

Writing Skills

If you need help with your writing skills, please make use of the Writing Lab in D-221 or call (425) 564-2493 for more information. Please go to them early, not the hour before your paper is due!

Posting Course Documents

As needed, course info, course documents and/or additional course information will be posted to our Vista/Blackboard class site.

ADDITIONAL REFERENCE LIST

New Building Institute Advanced Lighting Guidelines

<http://www.algonline.org/>

Bringing Interiors to Light Fran Kellog Smith 1986
TH7703.S57

Light is the Theme Louis I. Kahn, 1901
NA737.K32 J64

Perception and Lighting as Formgivers for Architecture
William Lam. 1977, NA2765.L35

Poetics of Light Henry Plummer 1987
NA6.A12

Please note: Student work includes all process work, notebooks, digital images, and all finished projects from the beginning of the quarter through final projects. Students may make arrangements with their instructors to photograph or scan their projects but the college will keep the original work. After the completion of the CIDA site visit in fall of 2012 work will be returned upon request.

The DRC office is located in B 132 or you can call our reception desk at 425.564.2498. Deaf students can reach us by video phone at 425-440-2025 or by TTY at 425-564-4110 Please visit our website for application information into our program and other helpful links at: www.bellevuecollege.edu/drc

Changes

The instructor reserves the right to make additions and/or corrections to the course content and the course syllabus as needed throughout the quarter. All changes will be posted & announced through our Vista/Blackboard class site.

Acknowledgement of Syllabus

Each student is required to acknowledge the syllabus by submitting the syllabus acknowledgement assignment notice in the assignments tool.

The IESNA Lighting Handbook, 10th Edition

Illuminating Engineering Society of North America
Editor: David DiLaura, Kevin Houser, Richard Mistrick, Gary Steffy

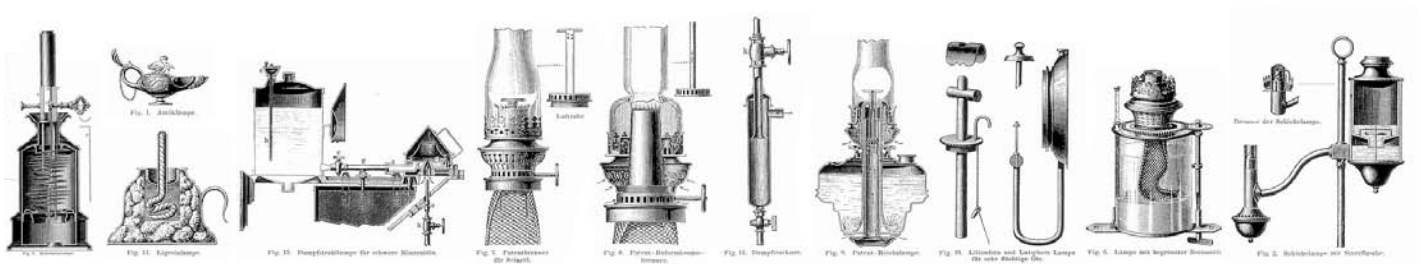
Light: The Shape of Space Lou Michel 1996
ISBN 0-471-28618-4

Architectural Lighting, Second Edition

M. Davis Evans and Victor Olgyay, McGraw Hill, 2001
ISBN 0-07-020587-6

Light Revealing Architecture Marietta Millet

John Wiley and Sons, 1996
ISBN 0-442-01887-8



Principles of Lighting

INDES 191

Schedule

Required Preliminary Reading

The History of Architectural Lighting

WEEK 1

Monday

April 9

Lecture:

What is Light (The Physics)
 The Physiology of the Human Eye
 Understanding Visual Perception

Assignment 1: See Light

Reading Assignment: Architecture of Light, Chapters 5,6,7
 Fundamentals of Lighting, Chapter 1

WEEK 2

Monday

April 16

Lecture:

Visual Perception and Quantifying Light
 Lamps and Lamp Types

Reading Assignment: Architecture of Light, Chapters 8,18
 Fundamentals of Lighting, Chapter 3

WEEK 3

Monday

April 23

Lecture:

Electric Light Sources / Luminaires
 Photometric Data
 Resources - eLumit

Reading Assignment: Architecture of Light, Chapters 19, 20
 Fundamentals of Lighting, Chapter 6

WEEK 4

Monday

April 30

Lecture:

Lighting Calculations, Lighting Metrics
 Deciphering lighting cut sheets

Assignment 2: Lighting Calculations

Reading Assignment: Architecture of Light, Chapters 2,3,4
 Fundamentals of Lighting, Chapter 8

Schedule *cont.*

WEEK 5

Monday

May 7

Lecture:

- Lighting design
- The Texture, Shape & Location of Light
- Directing & Controlling Light
- Strategies for lighting interior spaces
- Technology and trends

Assignment 3: Begin Final Project

Reading Assignment: Architecture of Light, Chapters 9,10,11,12,13,14

WEEK 6

Monday

May 14

Lecture:

- Conveying Design Intent
- Schedules and plans
- Specifications

Assignment : Continue Working on Final Project

Reading Assignment: Architecture of Light, Chapters 17, 21,25,26

MID TERM EXAM - TAKEN ONLINE

WEEK 7

Monday

May 21

Lecture:

- Daylighting / Daylight Harvesting
- Lighting Controls
- Lighting Equipment
- Details and Lighting Integration

Assignment : Continue Working on Final Project

WEEK 8

Monday

May 28

NO CLASS - MEMORIAL DAY

Schedule *cont.*

WEEK 9

Monday

June 4

Final Project Discussions

WEEK 10

Monday

June 11

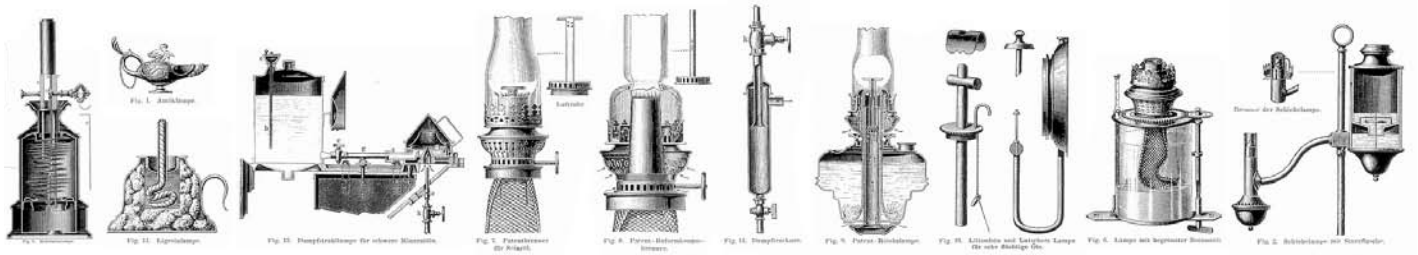
Final Project Presentations

WEEK 11

Monday

June 18

Final Project Presentations



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RECOGNITION OF SYLLABUS

The syllabus is a contract between the student and instructor, establishing the learning outcomes and context, as well as the expected conduct, rights, and responsibilities of students in this class. It is important that you understand and are prepared for the learning experience ahead by understanding the syllabus contents.

Please sign below, as confirmation that you've read the syllabus and that you will discuss with the instructor any issues that you consider confusing, problematic, or open to dialogue with the entire class. If your discussion is of a personal nature, please make an appointment with me, rather than discuss it during class.

Please print name

Signature

Date



Release of Liability and Medical
Release for Students

I, _____ (PRINT student's name) hereby authorize Bellevue College, its officers, employees, and agents, full authority and permission to take whatever action they feel is reasonably warranted if I become incapacitated. I understand that in the event of a medical emergency, Bellevue College may refer me to a licensed medical practitioner and/or clinic and hereby consent that such physician, hospital, or clinic may treat me in response to the medical emergency. I also hereby authorize that a photocopy of this authorization be accepted with the same authority as this original. This authority and permission includes, but is not necessarily limited to, the following: rendering or ordering medical treatment, the giving of medication, and any examinations, X-rays, anesthetic, medical, or surgical diagnosis or treatment or hospital care if and as deemed necessary. The undersigned agrees to be financially responsible for all medical attention so authorized or ordered during my attendance at Bellevue College.

My signature below represents that I have no medical restriction that limits my full participation in the programs and activities of the college, except as disclosed in any writing attached to this document.

To the fullest extent permitted by law, I hereby release Bellevue College, its officers, employees, and agents from all liability, actions, debts, claims, demands of every kind and nature which may arise from my attendance, and further waive and release all claims related to, or arising from, such decisions or actions as may be taken under the authority of this document.

This release and waiver remain in effect while I am enrolled at Bellevue College or until it is revoked in writing by the undersigned.

Student's Signature	Date
Phone Number (include area code)	Email address

Routing Instructions

- 1) Administrative Services

PERSONAL INFORMATION

Name:	Student ID#:	Email:	Phone:
Emergency Contact Name:		Phone:	
Do you have health insurance? (Please attach copy of insurance)		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Allergies/Medication (If yes, please list) _____		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Dietary Restrictions: (If yes, please specify) _____		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Do you have any disabilities that we should be aware of? (If yes, please specify) _____		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are you registered for classes at Bellevue College this quarter (if during break, past or future quarter)?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are you 18 years of age as of today?		<input type="checkbox"/> Yes <input type="checkbox"/> No	

TRAVEL RULES

While traveling, students are seen as representatives of the college and their conduct during the course of travel is of utmost importance. The student therefore agrees to conform to the Bellevue College Student Code of Conduct including regular attendance of all scheduled events for which the travel/conference entails, and to conform to all applicable rules, regulations and policies of Bellevue College.

1. There will be **ABSOLUTELY NO ALCOHOL and/or DRUGS ALLOWED**. You will be sent home immediately, at your own expense, if this rule is violated.
2. "Curfew" is defined as follows: At curfew time, all students shall be in their own bed with music/TV turned down to a minimum.
3. During free time, always travel with another student. Students are not allowed any excursions on their own.
4. All damage done to rooms shall be paid for by the responsible students (all students assigned to that room).
5. If you are going sightseeing with family/friends during free time, you must first inform Bellevue College administrators in charge of the trip. Being with family/friends does not excuse you from being late and/or missing curfew.
6. Attendance of all planned group activities and events associates with this travel is mandatory.

Student Signature	Date

Routing Instructions

- 1) Student Programs/OUA