ARCH 499:  
Exterior Architectural Light and its Effect on Community and Nature

Units: 2  
Spring '24: Tuesday 12-1:50pm

Location: TBD

Instructor: Lauren Dandridge, LC, IES  
Office: TBD  
Office Hours: TBD  
Contact Info: ldandrid@usc.edu

Teaching Assistant: TBD  
Office: [Physical or virtual address]  
Office Hours:  
Contact Info: [Email, phone number (office, cell), Skype, etc.]

IT Help:  
Hours of Service:  
Contact Info: [Email, phone number (office, cell), Skype]

Course Description

It all starts with an idea. That idea is brought to life with exterior lighting design, starting with the story and unfolds the plot, the characters, and highlights through illumination. While interior lighting can be bound within walls, exterior lighting knows no limit of impact to the surrounding environment or the effect on the humans that inhabit those spaces. In this class, we will explore fundamental lighting vocabulary and functions, then dive into the various types of spaces and applications that demand an enhanced understanding of lighting quality through mood, illuminance, layering, focus, and contrast. These guides will help students determine fixture choice, lumen output, color, and placement. This course will utilize lectures, assignments, projects and live demonstrations, to help students discover how lighting intersects with crucial building systems, landscape architecture, and planning, as well as local and statewide recommendations and codes.

Learning Objectives

- Define lighting technology, techniques, and vocabulary
- Describe the emotional connection between the lighting and the environment
- Create lit environments that respect and care for nature and communities
- Assess the interaction between light, plants, and building materials
- Develop critical processes for different lighting zones and the impact on design requirements
- Present detailed documentation for installation of lighting materials into facades, structures, and landscaping
- Communicate phased design progression through written and oral presentations
- Document illumination levels in various outdoor lighting environments

**Prerequisite(s):** None  
**Co-Requisite(s):** None  
**Concurrent Enrollment:** None  
**Recommended Preparation:** None

**Course Notes**

This is a hands-on course that drives in the importance of experiencing light outside with your human eye. There is a lack of understanding that comes with only reading about lighting or seeing it through the distortion of a screen. One must experience light physically to understand the full impact of its qualities and functions. The course will include in-class presentations by the instructor and visiting lecturers as well as live demonstrations to create visual and tactile memories of lighting in the given spaces. Zoom will be reserved for guest lectures primarily. This class will heavily rely on Blackboard for turning in assignments, the journal entry feature as well as posting lectures, materials, internship opportunities, and articles.

In addition to the required assignments and lectures, there will be research assignments exploring professionally designed projects to learn about design and installation techniques. There will be class reviews of each of these projects to understand the processes that professional firms use to evaluate program requirements and execution. Some of these projects will require going to the sites in person.

At its core, this is a class in critical thinking and creative problem solving. Conventional facade design and delivery practices will be reviewed and also be challenged. The instructor asks that the class operate under the belief of a shared equality of background and that all ideas deserve consideration. Instructors understand that lighting knowledge coming into this class will be limited at best and will encourage students to jump in and strive to experience as much as possible within the given time.

**Technological Proficiency and Hardware/Software Required**

- AutoCAD (proficiency preferred, but not required)
- Photoshop (proficiency preferred)
- Indesign/Powerpoint/Google Slides – some accessible presentation software
- AGI32 – Will be provided in class

**Required Readings and Supplementary Materials**

(All materials are available through Springer.com and jost.com with Student USC Login and will be provided on Blackboard)


Optional Readings and Supplementary Materials


Description and Assessment of Assignments

Reading Assignments will be summarized with thoughts and questions as journal entries in Blackboard.
Lightwalk 1:

This will be a personal review of the student’s residential exterior life. Photography during the day and again at night shall accompany the students assessment of the lighting conditions around their home.

Lightwalk 2:

With precedents in mind from lecture and supplied with a light meter and lighting distribution app, Students will evaluate lighting quality in a commercial outdoor environment (outdoor mall, main street, promenade etc). Taking additional care to note their perception against measured light amounts.

Lightwalk 3:

Students will venture out to find different forms of façade and building mounted lighting. Particular care will be paid to how the building sits in its environment. Deliverables from this assignment will be a lighting FC Value study and scavenger hunt.

Lightwalk 4:

Students will be assigned in groups to planned plazas and parks around LA to evaluate design effectiveness and nighttime activation. Extra care will be needed as their assigned plaza will be used for the Midterm project as a redesign opportunity.

Midterm:

Downtown Streetscape Revitalization (TBD)

Project would be a multi-function landscape lighting challenge: A pedestrian walking path between a town hub and multiple types of buildings/ store fronts. Students will need to solve transitional lighting between different types of exterior spaces, lighting for vehicular safety, dark sky requirements, residential concerns, and functional lighting for the pedestrian.

Final Project:

Redesign of the Leimart Park Farmers Market district (TBD)

Large area of the retail and commercial spaces near the historic park have been purchased and the city would like to renovate the park and adjacent streets. The areas daytime use for a farmers market extends into evening celebrations and street closures for parties and events. There are many lighting challenges that would be addressed here: approach to the multiple building exterior typologies, facade texture and street lighting for vehicles during normal use and also during events, pedestrian safety concerns regarding vehicles and other pedestrians, approachability and multiple scales of architecture and luminaires from the community as well as the city of Los Angeles.

Participation

Participation is required for this class. There will be several in person demonstrations and group activities that require attendance and active participation in class.
Grading Breakdown

<table>
<thead>
<tr>
<th>Assessment Tool (assignments)</th>
<th>Points</th>
<th>% of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments (Journal Entries, Lightwalk Documentation, Photoshop tutorials)</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Midterm Project</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Final Project</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Participation</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Grading Scale

Course final grades will be determined using the following scale:

Table 2 Course Grading Scale

<table>
<thead>
<tr>
<th>Letter grade</th>
<th>Corresponding numerical point range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>95-100</td>
</tr>
<tr>
<td>A-</td>
<td>90-94</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
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<tr>
<td>C+</td>
<td>77-79</td>
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<td>C</td>
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<tr>
<td>D-</td>
<td>60-62</td>
</tr>
<tr>
<td>F</td>
<td>59 and below</td>
</tr>
</tbody>
</table>

Assignment Submission Policy

All homework and assignments are to be turned in on Blackboard ½ hour before the beginning of class, on the due date. In the event Blackboard is down, assignments are to be emailed.

Late work

Late assignments will receive a 5% deduction for each day it is late. Please email if there are circumstances that prevent turning in homework on time.

Grading Timeline

Assignments will be graded within 3 school days after the due date.

Attendance

Attendance is mandatory! You cannot create visual lighting memories without being in class. More than three absences will result in a failure of the course. Any student not in class within the first 10
minutes is considered tardy, and any student absent (in any form including sleep, technological distractions, or by leaving mid-class for a long bathroom/water break) for more than 1/3 of the class can be considered fully absent. It is always the student’s responsibility to seek means (if possible) to make up work missed due to absences, not the instructors, although such recourse is not always an option due to the nature of the material covered. All written data, research results, drawings and presentations will be considered in the grading process. Being absent on the day of a project, quiz, paper or exam is due can lead to an “F” for the at project, quiz, paper or exam (unless faculty conceded the reason is due to an excusable absence for personal illness/family emergency/religious observance)

Classroom norms

- This class will take place in various locations and will involve being outside, being on the ground, getting dirty, and being ok with that. Attire should match the level of physical activity required. Shoes should be closed-toe for demo days for protection.
- During design discussions, please build on each other’s comments toward a shared understanding.
- Ask questions if you are confused or need an alternate explanation.
- Avoid inflammatory language and always use a respectful tone.

Zoom etiquette
For Zoom classes, please plan on turning your camera on and microphone muted as needed. Zoom classes will be recorded and available on Blackboard. Be mindful of your background and surroundings. Classes should be logged into from an environment that allows concentration and note taking.

Academic Integrity
The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university’s mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the USC Student Handbook. All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or “recycle” work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity’s website, and university policies on Research and Scholarship Misconduct.

AI Generated Content Policy
Since creating, analytical, and critical thinking skills are part of the learning outcomes of this course, all assignments should be prepared by the student working individually or in groups. Students may not have another person or entity complete any substantive portion of the assignment. Developing strong
competencies in these areas will prepare you for a competitive workplace. In this class, you are expected to submit work that demonstrates your individual mastery of the course concepts. Therefore, using AI-generated tools is prohibited in this course, will be identified as plagiarism, and will be reported to the Office of Academic Integrity.

Course Content Distribution and Synchronous Session Recordings Policies
USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. (Living our Unifying Values: The USC Student Handbook, page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. (Living our Unifying Values: The USC Student Handbook, page 13).

Course Evaluations
Course evaluation occurs at the end of the semester university-wide. It is an important review of students’ experience in the class. The process and intent of the end-of-semester evaluation should be provided. In addition, a mid-semester evaluation is recommended.

Course Schedule
Week 1:
- **Topics**
  - Course Logistics
  - Introduction to lighting as a discipline with design precedents
  - Basic perception, vision, and nighttime visual acuity
- **Reading and Homework**
  - Richard Kelly Excerpt (Confirming PDF)

Week 2:
- **Topics**
  - Lighting Terminology, Mounting Style and Tech, Basic Calculation
  - Local Design Firm and Project Review
- **Reading and Homework**
  - HMWK: Light Walk 1: Residential Lighting Review – Photos

Week 3:
- **Topics**
  - Light Meter Usage
  - Lighting Quality Review
Download Fusion Optix App

- Reading

- Homework

Week 4:
- Topics
  - Light as a placemaker - layering
  - Lighting Composition
  - Lighting Spaces and Zones
- Reading and Homework

- Homework
  - HMWK: Light Walk 2: Commercial Corridor/ Area Lighting Review

Week 5:
- Topics
  - Brightness vs Illuminance
  - Codes and Exterior Lighting Restrictions
- Reading

- Homework
  - HMWK: Light Walk 3- Urban Streetscape Lighting Review with Light Meter measurements and photos
  - HMWK: Midterm Assigned

Week 6:
- Topics
  - Basic Electricity
  - Lighting Controls, Luminaires and Systems
- Reading and Homework
  - HMWK: Midterm Continued

Week 7:
- Topics
  - Design Communication
  - Documenting the Nighttime Environment
  - Photoshop and Rendering Techniques
- Reading and Homework
  - HMWK: Midterm Continued

Week 8: Midterm Review
Week 9:
- **Topics**
  - Lighting and Safety
  - Transitional Lighting – Environmental Design for the Day to Night Experience
  - Wayfinding
- **Reading and Homework**
  - HMWK: Light Walk 4- Plaza and Park Lighting Review with Light Meter measurements and photos

Week 10:
- **Topics**
  - Lighting for the Pedestrian and Transportation (vehicles, train stations, sidewalks, subways)
- **Reading**
- **Homework**
  - HMWK: Final Project Assigned

Week 11:
- **Topics**
  - Guest Lecturer from the International Dark Sky Association
  - Light Pollution and its impact on human health, communities, and wildlife
- **Reading**
- **Homework**
  - HMWK: Final Project work continued

Week 12:
- **Topics**
  - Installation techniques and integration (Facades, In-Grade, Recessed etc)
- **Reading**
- **Homework**
  - HMWK: Final Project Continued

Week 13: Exterior Lighting Demo on Campus
- **Reading**
- **Homework**
HMWK: Final Project Continued

Week 14:
- Topics
  - Light Art / Monuments
  - Architectural Pixel Mapping / Immersive Environments
- Reading and Homework
  - HMWK: Final Project Continued

Week 15: Guest Lecture Lighting Designer

Final: TBD

Statement on Academic Conduct and Support Systems

Academic Integrity:
The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, compromises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university’s mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or “recycle” work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity’s website, and university policies on Research and Scholarship Misconduct.

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University’s educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More
information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

**Counseling and Mental Health** - (213) 740-9355 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

**988 Suicide and Crisis Lifeline** - 988 for both calls and text messages – 24/7 on call
The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

**Relationship and Sexual Violence Prevention Services (RSVP)** - (213) 740-9355(WELL) – 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

**Office for Equity, Equal Opportunity, and Title IX (EEO-TIX)** - (213) 740-5086
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

**Reporting Incidents of Bias or Harassment** - (213) 740-5086 or (213) 821-8298
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

**The Office of Student Accessibility Services (OSAS)** - (213) 740-0776
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

**USC Campus Support and Intervention** - (213) 740-0411
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

**Diversity, Equity and Inclusion** - (213) 740-2101
Information on events, programs and training, the Provost’s Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

**USC Emergency** - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

**USC Department of Public Safety** - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call
Non-emergency assistance or information.

**Office of the Ombuds** - (213) 821-9556 (UPC) / (323-442-0382 (HSC)
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.
Occupational Therapy Faculty Practice - (323) 442-2850 or oftp@med.usc.edu
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.