





### **MASTER IN**

## LIGHTING DESIGN PROJECTS

• Degree: Master in Lighting Design Projects

· Credits: 60 ECTS

Duration: 1 academic year
Start date: October
Language: English
Modality: On-campus

Discover the power of lighting design through an approach that goes beyond aesthetics, exploring light as a language capable of shaping human experiences in the built environment. Through visual ergonomics, you will learn to use both artificial and natural light as essential tools for enhancing wellbeing.

The Master in Lighting Design Projects provides a comprehensive understanding of lighting design by combining scientific knowledge with practical experience. Throughout the program, you will develop lighting projects that integrate theoretical and applied disciplines, consolidating your learning through interaction with faculty and peers in presentations and open discussions.

Sessions take place in a dynamic and collaborative environment, where you will engage in tutorials, creative and independent workshops, and experimental labs using prototypes and models to explore lighting design in a hands-on way. By working both individually and in teams, you will refine your skills to tackle challenges across various contexts, preparing you to lead innovative and sustainable projects in this exciting field.

### Who is it for?

This program is designed for graduates and professionals from diverse fields, including:

- Interior Design
- Product Design
- Architecture and Engineering
- · Visual and Digital Arts
- Stage Lighting (theater, television, film, advertising)
- Psychology
- Decoration and Window Dressing
- · Environmental Design

### **Career Opportunities**

- Lighting Product Designer
- Architectural Lighting Designer
- Interior Lighting Project Designer
- Lighting Installation Designer, etc.



### **Objectives**

This master's program is designed to specialize you in lighting design, blending creativity with technical expertise. You will explore luminaire design, lighting for architecture and interiors, and the creation of immersive lighting experiences.

Throughout the program, you will engage with cutting-edge methodologies, analyzing the latest technological innovations in the field. You will learn to select appropriate light sources, define control systems, and strategically design their arrangement in space, always considering the interaction between light and materials.

Additionally, you will develop a deep sensitivity to the language of light and its impact on both the function and aesthetics of architectural spaces, allowing you to create environments that balance functionality and emotion.

### **Structure**

The program is structured into three key areas:

#### 1. Theoretical Content:

- · Understanding the language of light in design projects.
- · Methodologies for defining lighting conditions based on visual and physical principles.

### 2. Technical Content:

- · Tools and techniques for lighting design.
- · Analysis of continuous innovation in the lighting industry.

### 3. Practical Content:

- · Workshops on light sources, technology, visual ergonomics, performance, sustainability, and lighting control.
- $\cdot$  Site visits to key lighting design references.
- · Laboratory experimentation, peer discussions, and research-driven project development.

### **SYLLABUS**

\*The syllabus is subject to change

## MODULE I (8 ECTS) INTRODUCTION TO LIGHTING

- · History of light: light, shadow, and space.
  - · Reflections on natural and artificial light and their relationship with space.
  - · The value of shadow.
- · Light perception: scientific and psychological principles.
  - · Methods of interacting with light and shadow.
- · Lighting technology: technical principles and fundamental laws.
  - · Light.
  - · The eye.
  - · Properties of matter.
  - · Color.
  - · Luminous magnitudes.
  - · Fundamental principles.
- · New trends in lighting design.
  - · Analysis of ongoing innovations in the sector.
  - · Insight into trend forecasting.

## MODULE II (8 ECTS) THE LANGUAGE OF LIGHT

- · Lighting design.
  - · Understanding the structure and details of the design process.
  - · Design criteria for architectural lighting.
  - · Light perception.
  - · Light and color in design.
  - · Light and space in design.
- Light: digital design and manufacturing tools.
  - · Use of lighting calculation tools.
  - $\cdot$  Digital representation and visualization of light effects in design.
  - · Programming for luminaire manufacturing.
- Light: interaction technologies in space.
  - · Control systems.

# MODULE III (10 ECTS) PROJECT WORKSHOP 1

- · Lighting installation design project.
  - $\cdot$  Research on spatial lighting design references.
  - · Selection and evaluation of luminaires.
  - · In-depth exploration of light effects.
  - · Rendering techniques for design presentation.



### **SYLLABUS**

# MODULE IV (10 ECTS) PROJECT WORKSHOP 2

- Lighting design project for architecture and interior design.
  - · Research on spatial lighting design references.
  - · Selection and evaluation of luminaires.
  - · In-depth exploration of light effects.
  - · Lighting sustainability study.

### MODULE V (10 ECTS) PROJECT WORKSHOP 3

- · Lighting product design project.
  - · Research on lighting product design references.
  - · Selection and evaluation of light sources.
  - · In-depth exploration of light effects.
  - · Lighting sustainability study.

## MODULE VI (14 ECTS) MASTER'S FINAL THESIS

You will have the opportunity to choose one of the three projects developed in modules 3, 4, or 5 and further expand on it for your final master's project.

# WORK PLACEMENTS (OPTIONAL)



# MASTER'S DIRECTOR



### **Edgar Domínguez Carreño**

Architect graduated from the National Autonomous University of Mexico (UNAM), with a postgraduate degree in Urban Form and Territory from the Barcelona School of Architecture (ETSAB/UPC). He also holds a master's degree in Projects: Approaches to Architecture from the Environment (ETSAB/UPC) and a Ph.D. in Architecture, with a thesis titled The Value of Shadow in Lighting Design (ETSAB/UPC).

In addition to directing this program, he is a professor of Lighting Design for Interior Spaces in the undergraduate degree and also teaches in the Official Master's Degree in Experiential Interior Design. He is involved in the Postgraduate Degree in Light and Architecture within the Master's Degree in Architecture and Environment at the Universitat Politècnica de Catalunya (UPC).

With extensive professional experience as a lighting designer, he began his career at iGuzzini, a luminaire design and manufacturing company, contributing to various lighting design projects. Later, he founded llombra studio, developing national and international projects in sectors such as housing, retail, corporate spaces, and sports facilities. His work also includes concept development, prototypes, and manufacturing luminaires and art installations.

In the field of artistic installations, he has created light exhibition projects for the Llum Barcelona Light Arts Festival 2024 and 2025, in collaboration with our School.



### **FACULTY**

#### Marina Cela

Senior architect with experience in residential design and international projects at External Reference. She is currently a Ph.D. student in sustainable architecture at UPC and has led social initiatives such as Balcón Vivo and Patio Vivo, promoting urban ecology. Marina teaches sustainability and biomaterials at LCI Barcelona. Her project Plug in Nature explores the integration of biomaterials and artificial intelligence in the design of imaginary spaces.

#### Miguel Guerrero Piñar

Architect, designer, and educator specialized in digital fabrication. A professor at LCI Barcelona and IAAC, he teaches design and digital fabrication applied to fashion, interiors, and product design. Miguel is the founder of Miwa.studio, where he combines digital fabrication with artisanal techniques to develop architectural projects and unique design pieces. His teaching approach integrates sustainability, technology, and creativity, fostering innovation in contemporary design.

### Marta López Viana

Architect from UPC and teacher in interior design. She is the codirector of the Postgraduate Course in Light and Architecture at UPC and an expert in ephemeral lighting installations, recognized in national design awards. In 2019, she received a Leonardo grant from the BBVA Foundation to research the use of light in the revitalization of urban spaces. Marta leads Estudi LopezViana in Sabadell, where she develops exhibition, interior, and housing projects.

#### Elisabet M. Serra

Architect and project manager at Room Global, specializing in construction and renovations in the retail sector. She was a partner at OSMS, where she led high-value residential projects. She has worked on rehabilitation projects with the Josep Olivé Saperas architecture firm and the Rubí City Council. She has been awarded in architecture competitions for her innovation in rehabilitation and public space design.

#### Alex Meilan

Industrial Engineer from UPC with a Master's Degree in Project Management from UB. He has worked at Nissan and General Electric, leading renewable energy, product certification, and quality projects. Alex is an expert in lighting and energy efficiency and co-founded llombra, a lighting design company. He currently advises on lighting projects and combines his engineering expertise with his passion for design and technological innovation.

#### José Mulet

Lighting designer, sound technician, and set designer with over 17 years of experience in shows, television, and live events. Specializing in lighting control systems, José has worked in theaters, concerts, and congresses. He currently applies his extensive experience to architecture, interior design, and landscaping, collaborating with studios and lighting manufacturers. He is also dedicated to training and consulting on lighting control systems for architects and engineers.

#### Francesco Sacconi

Italian architect specialized in light and ephemeral design. A graduate of the University of Catania, Francesco works at External Reference Architects, where he has developed projects such as the Suite W Hotel in Barcelona and Mahou Madrid. He is a professor at LCI Barcelona and La Salle, where he teaches international workshops on architecture and light. His approach combines innovation, technical excellence, and creativity, exploring new methodologies in spatial design.

#### Elisa Tagliaboschi

Architect specialized in interior and industrial design. Educated at La Sapienza University of Rome and UPC in Barcelona, Elisa has worked in renowned design studios and the luxury retail sector. She is the founder of the Linee showroom, where she designs exclusive spaces and collaborates with brands such as Puig. Her approach blends creativity and attention to detail, transforming each project into a unique and sophisticated experience.





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