

Curso 2025-26



Istituto Europeo di Design

Centro privado autorizado

GUÍA DOCENTE DE

Laboratory. Lighting: Technology and Project

Título de Grado en
Enseñanzas Artísticas Superiores de Diseño

Especialidad de Diseño de Interiores

Fecha de actualización: 1 de septiembre de 2026



Dirección General de Universidades y
Enseñanzas Artísticas Superiores
CONSEJERÍA DE CIENCIA, UNIVERSIDADES
E INNOVACIÓN

Título de Grado en las Enseñanzas Artísticas Superiores de Diseño.

Subject: Laboratory. Lighting: Technology and Project (Laboratorio. Iluminación: proyecto y tecnología)

1. COURSE IDENTIFICATION

Type	Compulsory Specialisation Course	
Nature	Theory and Practice	
Specialisation / Pathway / Style / Instrument	Interior Design	
Subject Area	Materials and Technology Applied to Interior Design	
Teaching Period	5th and 6th Semester	
Number of Credits	4 ECTS	
Number of Hours	Total: 120h	In-person: 72h
Minimum Number of Students Required for the Course to Run	-	
Department	Interior Design Department	
Prerequisites	None	
Language(s) of Instruction	English	

2. LECTURER RESPONSIBLE FOR THE COURSE

Surname and Name	Email
Barragán Urbiola, Blanca	campus IED

3. LECTURERS AND GROUPS TAUGHT

Surname and Name	Email	Groups
Barragán Urbiola, Blanca	campus IED	All

4. COMPETENCES

Transversal Competences
CT1 Organise and plan work efficiently and effectively, fostering motivation.
CT2 Gather relevant information, analyse and synthesise it, and manage it appropriately.
CT3 Solve problems and make decisions in accordance with the objectives of the work being carried out.

CTD5 Understand and use at least one foreign language within the context of professional practice.

CT7 Use communication skills and constructive criticism in teamwork.

CT8 Develop ideas and arguments in a reasoned and critical manner.

CT12 Adapt, in competitive environments, to cultural, social and artistic changes and to developments in professional practice, and select appropriate pathways for continuing education.

CT13 Pursue excellence and quality in professional practice.

CT14 Master research methodology in the development of projects, ideas and viable solutions.

General Competences

CG3 Establish relationships between formal language, symbolic language and specific functionality.

CG4 Develop a scientific understanding of the perception and behaviour of form, matter, space, movement and colour.

CG8 Develop research and innovation strategies to address expectations centred on functions, needs and materials.

CG9 Research the intangible and symbolic aspects that influence quality.

CG14 Recognise the role of design as a factor in equality and social inclusion, and as a means of conveying cultural values.

CG21 Master research methodology.

CG16 Be able to identify environmentally sustainable solutions.

CG19 Demonstrate critical thinking and the ability to develop research strategies.

Specific Competences

CEI1 Generate and materialise functional, formal and technical solutions that enable the optimal use of interior spaces.

CEI5 Solve the aesthetic, functional, technical and construction problems that arise during the development and execution of the project.

CEI6 Relate formal and symbolic languages to specific functionality.

CEI8 Understand the most common fabrication, production and manufacturing processes in the different sectors related to Interior Design.

CEI9 Adapt methodology and proposals to the technological and industrial developments specific to the sector.

CEI15 Reflect on the positive social impact of design, its contribution to improving quality of life and the environment, and its capacity to generate identity, innovation and quality in production.

5. LEARNING OUTCOMES

- Identify the intangible phenomenon of light and its application to design.
- Identify lighting as a tool for shaping spaces and forms through its interaction with different materials.
- Identify the appropriate application of lighting to a space as a means of enhancing a design project.
- Be able to understand and analyse commercial luminaire catalogues as a practical working tool in professional practice.
- Be able to apply current regulations.

6. CONTENT

Thematic Block (if applicable)	Topic / Content
I. Theory of Light	Topic 1. Electromagnetic Spectrum Introduction to the physical properties of light, enabling an understanding of the phenomenon in terms of its linear and wave behaviour.
	Topic 2. Influence of Light on Human Beings The visual system. The perceptual system. The circadian cycle.
	Topic 3. Related Physical Principles Colour, reflection, refraction, dispersion and transmittance.
II. Light Sources and Luminaires	Topic 4. How to Choose an Artificial Light Source
	Topic 5. Artificial Light Sources “Lamps” - Study of the fundamental parameters of artificial light sources. Operating principles of the different lamps available on the market and their applications in lighting design for interior spaces.
	Topic 6. Luminaires Classification and uses of luminaires. Different families and applications. Work with product catalogues from different brands.

III. Lighting Design. Using light as a tool to enhance the conceptual qualities of design	Topic 7. Visual Perception and Psychology of Light Application of the laws of perception to the analysis of interior spaces.
	Topic 8. The Concepts of Visual Environment, Visual Task, Visual Comfort, Semantic Differentiator and Efficient Lighting Topics for training in the visual environment.

7. STUDENT WORKLOAD PLANNING

Type of Activity	Total Hours
Theoretical Activities	10.5 hours
Practical Activities	16.5 hours
Compulsory Other Training Activities (workshops, seminars, etc.)	32 hours
Assessment Activities	13 hours
Student Independent Study	10 hours
Preparation of Practical Work	26 hours
Assessment Activities	12 hours
Total Student Workload	120 hours

8. METHODOLOGY

Theoretical Activities	The main teaching method used is the lecture, in which course content is presented and explained by the lecturer, supported by the use of Information and Communication Technologies (ICT). Light will be introduced gradually to students. First, light will be presented as a physical phenomenon. Understanding this physical phenomenon will be essential in order to understand the other phenomena associated with lighting spaces and creating luminaires (reflection of light on materials, refraction of light through optical devices, filtered light, transmittance, etc.). Once light has been understood from a physical perspective and artificial light sources have been explained, the topics relating to luminaires and their applications will be developed. During these sessions, questions may be raised, doubts clarified, guidance provided on information research, and individual or group discussions encouraged. These sessions cover the course content through a three-way exchange of information (lecturer-student-student group), which is then developed into tangible exercises designed to form part of the practical activities. Some theoretical activities will be supported by lighting materials (lamps and luminaires) brought into the classroom by the lecturer or presented during showroom visits. This will help students interpret the theory and the numerical values assigned to each operating principle of artificial lighting: thermal radiation, gas discharge and electroluminescence. At the end of these sessions, a series of assignments or tasks will be proposed for students, individually or in groups, to develop during the practical activities.
Practical Activities	Practical sessions are organised around group or individual work: supervised sessions in which students work in groups or individually and receive assistance and guidance when required. During these group or individual work sessions, Problem-Based Learning is used: an educational approach in which students, starting from case studies, learn to find the information required to understand the problems and develop solutions, under the supervision of the lecturer. For these activities, printed luminaire catalogues updated annually will be used as a resource. Presentation of group or individual work: time is allocated for the presentation of assigned problems.

Compulsory Other Training Activities (workshops, seminars, etc.)	Design Workshop: a teaching session aimed at reviewing and discussing the concepts and topics presented in class. These sessions support the work proposed for the course, allowing students to clarify questions and explore in greater depth the content covered in theoretical and/or practical activities. Visits to lighting showrooms and commercial luminaire brands.
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9. ASSESSMENT AND GRADING CRITERIA AND METHODS

9.1. ASSESSMENT METHODS

Theoretical Activities	Students will be expected to participate in discussions held during theoretical sessions.
Practical Activities	Students will develop deliverables (practical work), either individually or in groups, related to the course content. Specific submission requirements will be established for each deliverable.
Compulsory Other Training Activities (workshops, seminars, etc.)	Attendance at the Design Workshop will be required. Visits to lighting showrooms and commercial lighting brands will be proposed.

9.2. ASSESSMENT CRITERIA

The following will be assessed:

- Identify the intangible phenomenon of light and its application to design.
- Identify lighting as a tool for shaping spaces and forms through its interaction with different materials.
- Identify the appropriate application of lighting to a space as a means of enhancing a design project.
- Be able to understand and analyse commercial luminaire catalogues as a practical working tool in professional practice.
- Be able to apply current regulations.

Assessment must be designed and planned in such a way that it is integrated into teaching and learning activities.

Student assessment should be continuous, personalised and comprehensive:

- Continuous, as it is embedded within the teaching and learning process and is therefore not limited to specific dates or assessment situations.
- Personalised, as it must take into account each student's abilities, skills and attitudes. Particular attention will be paid to the student's participation in group work.
- Comprehensive, as it requires consideration of the general competences established for the programme through the objectives of the different thematic units and subject areas.

Students' learning will be assessed in relation to the achievement of the educational objectives established in the curriculum and associated with the general and specific objectives, taking the assessment criteria established for the subject area as the primary reference.

In order to assess the students' learning process, it is necessary to:

- Assess their curricular competence (abilities and aptitudes).
- Assess the factors that hinder or facilitate effective learning.
- Encourage student self-assessment and peer assessment as a means of analysing and critically reviewing results, allowing students to adjust their attitudes and approaches in order to improve.
- Assess the learning context in which the student develops their knowledge and skills.

Theoretical Activities	Active participation in discussions held during the sessions.
Practical Activities	Completion, presentation and submission by the established deadline of the proposed group practical assignments related to the course content: • Assessment of the practical work completed • Assessment of the conclusions or work presented • Assessment of interaction during group work

Compulsory Other Training Activities

(workshops, seminars, etc.)

Attendance and participation in the Design Workshop, as well as in any other training activities that may be proposed.

9.3. GRADING CRITERIA

1. The assessment system used in this course follows a continuous assessment model.
2. Under the continuous assessment system, class attendance is compulsory, and students must attend at least 80% of the activities conducted in the presence of the lecturer.
3. Students who do not meet the requirements for continuous assessment must complete a specific submission for assessment without continuous assessment. This may include any components deemed appropriate, with their corresponding weightings specified in the relevant section of this course guide.
4. In all cases, students will have access to an extraordinary assessment opportunity, the structure, assessment methods and grading criteria of which are specified in this course guide.
5. To be eligible for continuous assessment, students must submit each and every practical assignment by the established deadline.

9.3.1. Weighting of Assessment Components for Continuous Assessment

Assessment Components	Weighting
Completion, presentation and submission of practical assignments	50%
Completion, presentation and submission of the final project	40%
Participation in critique sessions and proposed activities	10%
Total	100%

9.3.2. Weighting of Assessment Components for Assessment without Continuous Assessment

Reasons why a student may lose the right to continuous assessment: failure to meet the compulsory class attendance requirement, set at a minimum of 80% of activities conducted in the presence of the lecturer.

Assessment Components	Weighting
Completion, presentation and submission of course practical assignments	60%
Completion of a Specific Assessment for Students Who Have Lost the Right to Continuous Assessment	40%
Total	100%

9.3.3. Weighting of Assessment Components for the Extraordinary Assessment

Assessment Components	Weighting
Completion, presentation and submission of course practical assignments	60%
Completion of a Specific Assessment for the Extraordinary Assessment	40%
Total	100%

9.3.4. Weighting for the Assessment of Students with Disabilities

Adaptations to assessment methods must take into account the different types of disability.

Assessment Components	Weighting
To be determined according to the student's specific needs.	
Total	100%

10. SCHEDULE OF CONTENT, TEACHING METHODOLOGY AND ASSESSMENT

Session	CONTENT, ASSOCIATED TEACHING METHODOLOGY AND ASSESSMENT METHODS		Total hours In-Person	Total Independent Study Hours
Session 1	Introduction			
	Theoretical Activities	Lecture covering the specific content included in the course. The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	2.5 hours	3 hours

Session 2	TOPIC 1: Electromagnetic Spectrum			
	Theoretical Activities	Lecture covering the specific content of the section (Electromagnetic Spectrum). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hour	1 hour

	Practical Activities	Practical work in class.	1 hour	2 hours
	Other Training Activities	Design Workshop	2 hours	
	Assessment	Review of practical work/deliverables	0.5 hours	

Session 3	TOPIC 2: Influence of Light on Human Beings			
	Theoretical Activities	Lecture covering the specific content of the section (Influence of Light on Human Beings). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hour	
	Practical Activities	Practical work in class	1 hour	3 hours
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	0.5 hours	

Session 4	TOPIC 3: Related Physical Principles			
	Theoretical Activities	Lecture covering the specific content of the section (Related Physical Principles). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hour	1 hour
	Practical Activities	Practical work in class	1 hour	2 hours
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	0.5 hours	

Session 5	TOPIC 4: How to Choose an Artificial Light Source			
	Theoretical Activities	Lecture covering the specific content of the section (How to Choose an Artificial Light Source). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hour	1 hour
	Practical Activities	Practical assignments/case studies	1 hour	2 hours
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	0.5 hours	

Session 6	TOPIC 5: Lamps / Interim Exercise			
	Theoretical Activities	Lecture covering the specific content of the section (Artificial Light Sources). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hora	1 hour
	Practical Activities	Interim Exercise	1'5 hours	2 hours
	Other Training Activities	Design Workshop	3 hours	

Session 7	Interim Exercise			
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	2.5 hours	3 hours

Session 8	TOPIC 6: Luminaires			
	Theoretical Activities	Lecture covering the specific content of the section (Luminaires). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hour	1 hour
	Practical Activities	Practical work in class	1 hour	2 hours
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	0.5 hours	

Session 9	TOPIC 7: Visual Perception and Psychology of Light			
	Theoretical Activities	Lecture covering the specific content of the section (Visual Perception and Psychology of Light). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hour	1 hours
	Practical Activities	Practical work in class	1 hour	2 hours
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	0.5 hours	

Session 10	TOPIC 8: The Concepts of Visual Environment, Visual Task, Visual Comfort, Semantic Differentiator and Efficient Lighting			
	Theoretical Activities	Lecture covering the specific content of the section (Visual Environment, Visual Task and Visual Comfort). The lecturer will use documents, materials and images, analysed using the necessary ICT resources.	1 hour	1 hour

	Practical Activities	Practical work in class	1 hour	2 hours
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	0.5 hours	

Session 11, 12, 13 Y 14	FINAL PROJECT DEVELOPMENT			
	Practical Activities	Practical work in class. Development of a comprehensive exercise covering all course content.	8 hours	9 hours
	Other Training Activities	Design Workshop	3 hours	
	Assessment	Review of practical work/deliverables	2 hours	3 hours

Session 15	ASSESSMENT			
	Other Training Activities	Design Workshop	3 hours	
	Assessment	CONTINUOUS ASSESSMENT: Final presentation of practical class assignments ASSESSMENT WITHOUT CONTINUOUS ASSESSMENT: Presentation of the course assignments and completion of the specific assessment for this assessment opportunity.	2.5 hours	6 hours

Session 16	Grade Release and Assessment			
	Assessment	Review of submissions and course grading.	2.5 hours	

11. TEACHING RESOURCES AND MATERIALS

Printed catalogues.

Teaching resources and materials available on the virtual campus for each thematic block.

11.1. General Bibliography

Title	Luz/Light
Author	Joachim Fischer
Publisher	H. Fullmann

Title	Color y luz. Teoría y práctica
Author	Jorrit Tornquist
Publisher	Gustavo Gili

Title	Diseño con luz en bares y restaurantes
Author	Janet Turner
Publisher	McGraw-Hill / Interamericana

11.2. Supplementary Bibliography

Title	Italian Lighting Design: 1945-2000
Author	Alberto Bassi
Publisher	Electra Spa

Title	Diseño con luz en hoteles
Author	Janet Turner
Publisher	McGraw-Hill / Interamericana

Title	Diseño con luz en centros comerciales. Soluciones de iluminación para tiendas, centros comerciales y mercados
Author	Janet Turner
Publisher	McGraw-Hill / Interamericana

11.3. Useful Websites

www.incontroluce.net
www.erco.es
www.iguzzini.es

11.4. Other Teaching Materials and Resources

Book	Ultimate Lighting Design. Autor: AA.VV.
Book	Made of Light. The Architecture of Light and Architecture. Autor: AA.VV
Book	Light Zone City. Light Planning in the Urban Context. Autor: Van Santen, Christa
Book	Materia intangible, las reflexiones sobre la luz en el proyecto de arquitectura. Autor: Valero Ramos, Elisa