Course guides
310743 - 310743 - Architectural Lighting

Unit in charge: Barcelona School of Building Construction
Teaching unit: 748 - FIS - Department of Physics.
Degree: BACHELOR’S DEGREE IN ARCHITECTURAL TECHNOLOGY AND BUILDING CONSTRUCTION (Syllabus 2019).
(Optional subject).
Academic year: 2021  ECTS Credits: 3.0  Languages: Spanish

LECTURER
Coordinating lecturer: Rodríguez Cantalapiedra, Inmaculada
Others: Vásquez Paredes, Rodrigo Antonio

TEACHING METHODOLOGY
Different learning methods will be combined:
- Theoretical classes
- Auto-learning
- Laboratory practice with DIALux Evo.
- Practical work with computer tools, individually or as a team with DIALux Evo.
- Carrying out an individual and / or team project.

LEARNING OBJECTIVES OF THE SUBJECT
Acquisition of the knowledge and techniques necessary for the measurement and evaluation of the lighting of an interior or exterior space of an architecture project or public space, for the optimization of the detected problems and the realization of a lighting project, with DIALux Evo.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Self study</td>
<td>45,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>40.00</td>
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Total learning time: 75 h
CONTENTS

The beauty of light and vision

Description:
Electromagnetic radiation, solar radiation, radiation emitted by other light sources. Visible spectrum. Vision: eye and function parts, pupil as a diaphragm, lens to focus and retina with photosensitive cells, rods to clarity and movement and cones, sensitive to colors. Different sensitivity of the eye to light radiation. Photopic and scotopic vision. The beauty of light in architecture and public spaces, various case studies where you can see how these spaces are intervened through natural and artificial light.

Related activities:
Analysis of existing cases, visit to works and subsequent calculation with DIALux Evo of some of the case studies

Full-or-part-time: 2h
Theory classes: 2h

Photometry and color

Description:
Light comfort: Adaptation, accommodation and visual acuity, contrast. Glare.

Full-or-part-time: 3h
Theory classes: 2h
Practical classes: 1h

Light behavior of materials: reflected, absorbed and transmitted

Description:
Reflection, transmission and refraction. Polarization. Specular, diffuse and mixed reflection. Regular, diffuse and mixed transmission.

Full-or-part-time: 1h
Theory classes: 1h

Interior lighting

Description:
content english

Full-or-part-time: 12h
Theory classes: 5h
Practical classes: 5h
Laboratory classes: 2h
Artificial lighting

**Description:**
content english

**Full-or-part-time:** 5h
Theory classes: 1h
Laboratory classes: 4h

GRADING SYSTEM

Experimental Work
Individual or team work with DIALux Evo

BIBLIOGRAPHY

**Basic:**
- Código Técnico de la Edificación, Documento Básico HE 3 Condiciones de las instalaciones de iluminación. (2019).

RESOURCES

**Computer material:**
- DIALUX. Resource

**Other resources:**
Tutorials for Beginners https://www.youtube.com/watch?v=07YBwuBVpso&list=PLKzUB7xP_t4_Yl3qIDWDy5oCZn1R_6zSz
Open Channel https://www.youtube.com/user/TheDIALux/videos