euni well European University for Well-Being

STUDY GUIDE

Lighting and Information Technologies for vision and perception quality and wellbeing

Course/training name	BIP - Lighting and Information Technologies for vision and perception quality and wellbeing
Host Institution(s)	University of Florence
Co-organising Institution(s) (if applicable)	Living-Lab/ beXLab building environmental eXperience
Name and faculty of the lecturer(s)/trainer(s)	Prof. Carla Balocco Department of Architecture, DiDA

With the support of the Erasmus+ Programme of the European Union

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035821.

euni well European University for Well-Being

Mode of delivery	Hybrid (online or on campus)
Location (if applicable)	Florence, Italy
Dates of the online component (if applicable)	From 12 January 2026 to 09 March 2026
Dates of the on-site component (if applicable)	From 16 February 2026 to 20 February 2026
Cost	None The BIP does not require any registration fee. Selected participants may benefit from an Erasmus+ grant provided by their home university. For more information, please contact the Erasmus/ International Relations Office at your home institution.
Target audience(s)	☒ Bachelor's ☒ Master's ☒ PhD ☐ Educators ☒ Researchers ☐ Administrative staff
Prerequisites	Bachelor, Master and PhD student in: Architecture, Literature, Literature-Language&Culture, Letters&Arts, Psychology, Engineering, Environmental Engineering, Civil Engineering, Physics, Bioengineering and Quantitative Life Sciences, Orthoptics and Optometry English level: B2
Field(s) of research / study	1. Eco-design in the lighting sector 2. Environmentally sustainable lighting design
Related Sustainable Development Goals (SDG)	☐ 1 - No poverty ☐ 2 - Zero hunger ☒ 3 - Good health & well-being ☐ 4 - Quality education ☐ 5 - Gender equality ☐ 6 - Clean water & sanitation ☒ 7 - Affordable & clean energy ☐ 8 - Decent work & economic growth ☐ 10 - Reduced inequalities ☒ 11 - Sustainable cities and communities ☒ 12 - Responsible consumption & production ☒ 13 - Climate action ☐ 14 - Life below water ☐ 15 - Life on land ☐ 16 - Peace, justice & strong institutions ☐ 17 - Partnerships for the goals

	☐ 9 - Industry, innovation & infrastructure				
Number of ECTS and/or workload (in hours)	4 ECTS				
Language(s) of instruction	English				
Key words	Lighting and information technologies	Natural/artificial sustainable lighting	Quality of vision and perception	Visual comfort and health	Responsive light for climate change adaptation
Abstract	Light design is a complex, interdisciplinary process involving engineering, architecture, psychology, history and the humanities. The recent increase in the use of LED sources, combined with Visible Light Communication (VLC/OLC) systems, enables precise control over the colour, intensity and temperature of light. This enhances the quality and communicative potential of lighting projects, while reducing energy consumption and environmental impact. Modern lighting design focuses on visual comfort, perceptive quality, human health and sustainable development. This course combines theoretical lectures with practical activities in significant environments, such as museums and workplaces, to develop students' skills in integrating light with space and perception. The use of colour, materials, control technologies, and non-verbal communication is emphasised. Light is explored as a universal expressive medium that can convey meaning across cultural and sensory domains. Students will learn how to assess and redesign the 'light climate' of a space to create dynamic, sustainable environments that promote well-being, environmental awareness and strategic responses to climate change. The course leads students to design in the perspective of sustainable human centric lighting and the environment control (thermal and light especially in work environments). The student will be able to know and deal with the issues of environmental energy sustainability connected to sustainable, resilient, adaptive and conscious lighting design with a view to identifying strategic solutions that aim at climate change mitigation.				

Programme / session(s)' schedule	➢ **Virtual mobility**: 16 hours/32 hours consisting on virtual live lectures every Monday from the 12th of January 2026 to the 9th February 2026 at h. 2-6 pm. The course explores the fundamentals of light, vision, and perception, including radiometry, optics, photometry, colorimetry, and the physiological and neuropsychological bases of visual experience, with a focus on visual quality, comfort, and well-being. ➢ **Physical mobility:** in Florence from the 16th of February 2026 to the 20th of February 2026 (16 hours/32 hours consisting of in person activities carried out for 5 days).The course covers key European and international lighting regulations, practical light measurements in the Living-Lab/beXLab, and the integration of natural and artificial light for visual comfort. It includes case studies by leading designers, ergonomic vision tests (Radner and REX), and visits to exemplary sites like La Specola and Villa La Quiete.
Developed skills and competences	• Working with numbers and measures and digital devices • Thinking skills for processing information, ideas and concepts • Social communication and life skills • Applying health-related skills and environmental skills • conducting studies, investigations, measuring physical properties and monitoring safety and environmental conditions • Developing strategies for planning and scheduling work and activities
Objectives and learning outcomes	• Acquire skills to follow the lighting project, the related manufacturing and production process • Acquire knowledge of the importance of both light and vision quality and perception for the health and well-being of people • Ability to analyse, organize and implement lighting projects Learn tools and methods to design sustainable, human-centric lighting that supports health and well-being. • Develop the ability to combine natural and artificial light based on environmental, social, and cultural factors.
Assessment methods and criteria (if applicable)	Oral test of reasoning and comparison, analysis and insights into the main topics covered (this is expected for the last fifth day of the Physical mobility in Florence i.e. on 20th of February 2026).

European University for Well-Being

Type of certification issued upon attendance or completion	Transcript of Records (ToR) and Digital Badge