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ECOSLIGHT

MOOC URL

Link: https://mooc.daissy.eu/

MOOC TITLE

Essential Skills for Environmentally Conscious Smart Lighting Professionals

MOOC Landing Page / Description / Information text

About this course

The ECOSLIGHT Massive Open Online Course (MOOC) aims at enhancing **lighting, digital[1], green[2], entrepreneurship[3] and life competences[4]**.
The MOOC, which is **freely accessible** by anyone, aims at supporting lighting and wider construction industry professionals, as well as related professionals like decorators, sales persons, etc., to improve these skills, allowing them to acquire new skills in the field, network with other professionals and organizations inside and outside of the construction sector, becoming successful in managing emerging challenges.

The course is delivered in **8 weeks** and is organized in 22 modules that will allow you to develop a complete set of essential competences for modern professionals that work or would like to work in the lighting sector.
The MOOC is a **flexible, self – paced learning path**. You will be assisted and facilitated by tutors during the training.
Once you enrol, you will have guided access to all presentations, videos, quizzes, and additional resources. You will have the opportunity to actively participate by sharing your ideas and questions in the discussion forum. Upon successful completion, you will earn online badges and a **certificate in accordance with the European and national qualification frameworks and the European credit system for vocational education**.

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[1] Digital competences of the MOOC are mapped on DigComp 2.0: the European Digital Competence Framework 2.0

[2] Green competences of the MOOC are mapped on GreenComp: the European Sustainability Competence Framework

[3] Entrepreneurship competences of the MOOC are mapped on EntreComp: the Entrepreneurship Competence Framework

[4] Life competences of the MOOC are mapped on LifeComp: The European framework for the personal, social and learning to learn key competence

The learners who will successfully complete the MOOC will have the **possibility to enrol in specialisation courses** for the job profiles of Smart Lighting Systems Technician, Lighting Consultant, Lighting Systems Assistant Engineer, and Landscape and Street Lighting Technician. The specialization courses will be available only for people living in Greece, Italy, Germany, Austria and France.
Together with the specialisation courses, the trainees will take part to a Work-Based Learning Experience in companies of the lighting sector for the implementation of real projects.

Hints (with graphics):

- 100 % free – 100% online
- Level: EQF 5
- Available in English
- Intermediate level
- A flexible weekly workload and schedule
- You will need 8 weeks to complete the course (plus one week break in the middle and a few days in the end to fulfil all pending tests!)
- Certification in accordance with the European and national qualification frameworks and the European credit system for vocational education
- Shareable online badges
- Join a community of peers and participate to open and active discussions
- Opportunity for participants who will successfully complete the MOOC to enlist in specialised training for Smart Lighting Systems Technician, Lighting Consultant, Lighting Systems Assistant Engineer, and Landscape and Street Lighting Technician.

Who is this course for?

The MOOC is especially designed for construction professionals, related professionals like decorators, tertiary educational students, volunteers or people who would like to pursue their future career in the lighting sector.
Nevertheless, everyone who has an interest for the lighting sector is more than welcome.

What will you learn?

By the completion of this course, you will be able to:

- Understand the fundamentals of lighting.

- Implement tasks related to the work of Smart Lighting Systems technician, Lighting Consultant, Lighting Systems Assistant Engineer, Landscape and Street Lighting technician.
- Operate as a competent professional exploiting lighting, digital, green, entrepreneurship and life competences.

Competence Modules

LIGHTING	
Modules	**Description** (To be added by each responsible partner)
1. Indoor Lighting for Buildings and Artificial Lighting (17/10/2022-23/10/2022)	This module covers a wide field of knowledge about indoor artificial lighting. First of all, the fundamental measures and quantities of lighting and photometry are presented. Moreover, this course implements an introduction to colorimetry by demonstrating the relationship between light and color, trichromatic vision, color spaces and metrics of color rendering. Furthermore, the learner is introduced to the basic technologies of light sources and luminaires that are used in indoor lighting installations. Additionally, this course presents the basic aspects of indoor lighting design and control and explains daylight design and utilization in buildings.
2. Light for Outdoor installations (24/10/2022 - 30/10/2022)	Exterior lighting (architectural, functional and urban lighting), is a crucial design aspect for people and the environment. This part will give insight into the exterior lighting by including issues that affect the sustainability of a project (energy

	indicators, planning, determine the light requirements), the background of European standards in lighting, gaps for regulations of light pollution, the counter fighting of light pollution and weaknesses of completing the lighting project (vendors, lack of assessment through case studies).
3. Lighting system and associated technologies including smart Lighting (07/11/2022 - 13/11/2022)	The main objective of this MOOC is to offer a global view of the different light sources technologies used for indoor and outdoor illumination. Both legacy technologies (incandescent and discharge lamps) are presented and an emphasis is given to Solid State Lighting technologies that open the way to smart lighting systems. The learning objectives of the MOOC are: Know the light sources historical evolution Be able recognise the various legacy electric lamp technologies; Understand the operating principles of the legacy technologies; Master the characteristics of various legacy technologies lamps and their domain of use.
4. Light influence on human health, well-being and working performance (21/11/2022 - 27/11/2022)	This module highlights how light variations are the most important factor in regulating and maintaining our natural daily rhythm. The trainee will be guided to understand terms related to the relationship between lighting and human health (circadian rhythm, seasonal affective disorder etc.) and to realize that proper lighting design can lead to an optimal quality of life and well-being. It is then highlighted the relationship between workplace conditions like lighting and worker

	productivity and how this association is mediated by employee well-being.
5. Energy Efficiency and Lighting performance (05/12/2022 - 11/12/2022)	This module focuses on the energy optimization of lighting projects, costs and benefits. It details definitions of energy indexes, the Lighting Output Ratio, the Utilance, the Luminous efficiency and efficacy, as well as the Correlated Color Temperature (CCT), the Dimming techniques, Task lighting design, the General lighting index, and the Task lighting index. EU energy directives for lighting projects are presented and discussed, as well as the compliance with energy related standards. Last, there is an introducing the role of lighting in Zero Energy Buildings.

GREEN	
Modules	**Description (To be added by each responsible partner)**
1. Understand and promote the value of sustainable lighting (17/10/2022 - 23/10/2022)	The dynamic changes in application of lighting technologies lead to increased brightness of the nightscapes and disturbances of biological rhythms of flora and fauna. Professionals in the lighting sessions need to be aware of the adverse effects in order to counter fight light pollution when installing lighting technologies in order to create the least effects on the environment. In this module the effects of artificial light at night (ALAN) on nocturnal and diurnal organisms are explained, the sensitivity to certain light spectra and the effects of

	sustainable lighting planning to mitigate the effects.
2. Sustainable assessment of lighting systems and solutions (31/10/2022 - 06/11/2022)	This module concerns the sustainable evaluation of lighting systems. The appropriate criteria for sustainable lighting are explained, namely technical parameters that contribute to visual comfort and energy savings. This applies to indoor and outdoor lighting as well. The learner is guided so as to select the appropriate indoor luminaires with regards to their energy efficiency, minimization of glare, color rendering. The benefits of lighting control technologies are outlined. Furthermore, guidelines for the sustainability of outdoor lighting are demonstrated with regards to energy efficiency, correlated color temperature and light pollution. The types of light pollution are presented, along with its negative consequences for humans and the environment.
3. New sustainable lighting techniques (28/11/2022 - 04/12/2022)	This module concerns the new sustainable lighting techniques. First of all, the concept of human centric lighting is introduced and its benefits for human physiology and psychology. The utilization of tunable white LED luminaires is presented. The state-of-the-art metrics for the evaluation of human centric lighting are mentioned. With regards to outdoor lighting, the problem of light pollution is demonstrated. Methods of mitigating the problem are explained.
4. Understand the selection criteria of lighting services / systems and products in terms of sustainability (12/12/2022 - 18/12/2022)	A four-chapter module about lighting services, systems, and products that can contribute to sustainable lighting outcomes. The module informs on the illuminating sources, the tools and technical parameters that can aid verify if a lighting system is appropriately

	sustainable, and informs on the certification to consider for protecting natural nightscapes.
5. Understand the circular economy approach to lighting sector (12/12/2022 - 18/12/2022)	The circular economy concerning lighting sector will be presented. Stages of raw material acquisition, manufacturing, packaging and distribution, use and end of life will be presented. All issues affecting every stage will be analyzed. Case studies will be presented. Correlation of the lighting products with substantial environmental impact in multiple areas, as for example in primary energy, toxicological effects, the effect on global warming, the level of environmental acidification.

DIGITAL	
Modules	**Description (To be added by each responsible partner)**
1. Collaborating through digital technologies (24/10/2022 - 30/10/2022)	The module introduces learners to technologies and digital tools for collaborative processes and for co-creation and development of resources and knowledge. The students will be able to understand the human behaviour regarding collaboration, and will acquire competences on how to collaborate in a team and decide which digital tool to adopt.
2. Evaluating data, information and digital content (07/11/2022 - 13/11/2022)	This module addresses the ability to search and filter data, information and digital content; articulate needs across

	various digital environments. The trainee will acquire competences on how to assess, analyse and critically compare the credibility of online sources.
3. Protecting personal data and privacy 05/12/2022 - 11/12/2022)	This module facilitates the learner to establish and maintain positive business relationships between stakeholders (internal or external) deploying and complying with organisational processes. It also focuses to the maintainance of regular communications with customers / partners / suppliers, and to address needs through empathy with the environment and managing supply chain communications. Additionally, it will support the learner to ensure that stakeholder needs, concerns or complaints are understood and addressed in accordance with organisational policy. Protection of personal data and privacy in digital environments is essential nowadays, and in this regard, the learner will understand how to use and share personally identifiable information while being able to protect one and others from damages. Last, he/she will understand how digital services use a "Privacy policy" to inform about how personal data is used.

ENTREPRENEURSHIP	
Modules	**Description (To be added by each responsible partner)**
1. Spotting opportunities (31/10/2022-06/11/2022)	This module focuses on knowledge and techniques about identifying, evaluating and then acting on an opportunity. The students will learn how to use imagination and abilities to identify

	opportunities for creating value. This will be based on different analytical approaches for reformulating a challenge, so as to identify entrepreneurial opportunities. Students will be able to identify personal, social and professional opportunities for creating value, both in existing organisations or by setting up new ventures.
2. Vision (31/10/2022-06/11/2022)	This module deals with the necessary tools that a trainee will need to understand what it is an entrepreneurial vision and also to define and set the difference between vision, mission and value statements. Students will be able to identify what steps allow entrepreneurs to maintain their vision, categorize the principles that will help them start the effort to realize a vision and finally try to compose their own Vision Statement.
3. Creativity (21/11/2022-27/11/2022)	This module focuses on the introduction of techniques empowering the ability to think about a task or a problem in a new or different way, or the ability to use the imagination to generate new ideas. The students will acquire competences about how to apply a creative process by leveraging on curiosity, open mindedness, imagination, problem solving, networking and experimenting.
4. Valuing ideas (21/11/2022-27/11/2022)	This module deals with our thought processes. We will try to answer following questions: How do we generate ideas? Which of them are good? How do we evaluate ideas and which aspects influence a value?

	The idea of value is looked at from three different angles. Social, cultural and economic value. For evaluating and generating ideas the perception of human beings is significant. Therefore, this module deals with partial aspects of perception from a psychological point of view.
5. Taking the initiative (28/11/2022 - 04/12/2022)	This module tries to bring out the real meaning of "taking initiative" with different examples and from different perspectives. Some people never manage to take the initiative and regret the missed opportunities. The process of taking initiative is linked with a certain maturity that occurs in people who are ready to take on responsibility. It requires an independent way of working and forward thinking. People who take the initiative are, roughly speaking, "doers" not "thinkers". Value creation, problem solving, goal achievement, and weighing options and possibilities are not foreign words to a "doer," they are natural.
6. Coping with uncertainty, ambiguity and risk (28/11/2022 - 04/12/2022)	This module deals with change and risk. In life and in business, changes and risks are always just around the corner. Being able to plan for them and cope with them is an essential skill. For an entrepreneur, there is something new or something changing every day, so a good entrepreneurial mind will adapt and shift. Being able to cope with uncertainty means being able to learn to adapt.

7. Planning and management (12/12/2022 - 18/12/2022)	This module focuses on management skills and planning as such. In general, management skills require dealing with goals. There are different ways to plan and organise the way to reach one's goals. The acute question of the usage of classical or agile management methods will be discussed, as there will be a first approach on existing tools and frameworks. Terms like focus, vision, prioritisation or change will be reviewed in the context of the agile SCRUM project management methodology.

LIFE	
Modules	**Description (To be added by each responsible partner)**
1. Critical thinking (07/11/2022 - 13/11/2022)	The module introduces learners to concepts, the methods, and the techniques to understand situations and uncover hidden information. By applying cognitive and logic understanding of critical and lateral thinking to approach problems, the module will also help learners to build consolidated outcomes and unbiased knowledge. The learners will acquire competences about how to adopt the most important critical thinking techniques for finding a reliable and consolidated solution to issues and problems
2. Growth mindset (05/12/2022 - 11/12/2022)	This module will introduce you to the fundamental concepts of Growth Mindset. You will learn about the differences between a Fixed and Growth mindset.

	This course offers a synopsis of the difference between a fixed mindset and a growth mindset, specifically as it relates to teaching. You will be offered strategies on how to implement a growth mindset.

How to enrol?

To enrol in the Essential Skills for Environmentally Conscious Smart Lighting Professionals MOOC please fill-in the registration form.

If you have any questions about the registration process you may contact us at ecoslight.mooc@gmail.com

This email address will be active for the whole duration of the course to support you in your learning path: a tutor will always be available to help you with technical or course-related issues.

MOOC AUTHORS:

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