

Course Code	Course Name	Year/Semester	Theory	Practice	Credits	ECTS
IAED 4161	LIGHTING TECHNIQUE	2024-2025 / FALL	3	0	3	4

Level of Course: Undergraduate

Course Type: Elective Course

Language of Instruction: English

Course time: Friday 09:00-12:00

Course classroom: BB-35

Mode of Delivery: Class Teaching, Presentation, Assignments, Project Development

Prerequisites and Co-requisites: N/A

Course Coordinator: Lec. Elif Bakkaloğlu

Course Teaching Assistant:

Course Objectives: The course builds upon the basic knowledge related to the theoretical and application aspects of lighting design. Course main aim is to improve students' knowledge about psychological and physiological effects of light on user. Students will have an opportunity to explore the process of lighting design and how it affects the perception of space with color, texture and materials. Moreover, visual comforts and visual concepts for various functions will be covered.

Course Description: This course introduces the basic concepts and terminology of lighting. Within this content, the relationship between lighting and space will be taught by focusing on visual comfort, lighting control and level of the lighting. In addition, reflection and transmission of light, artificial light, light sources, calculation of average lighting for a quality environment will be examined. Students will be able to apply their knowledge to their design projects by using non-commercial lighting software.

Learning Outcomes: Upon successful completion of the course, students will be able to:

1. To gain the ability to conduct lighting designs for certain types of buildings and interiors by using the acquired basic knowledge on lighting.
2. To understand the differences between different light sources, characteristics and field of their usage and function.
3. To understand the basic principles and accurate application methods of the building materials and building system designs.
4. Using computer-based communication technologies for lighting design.

Language: Lectures presentation will be in English. Assignments and class practical exercises also will discuss in English. Students will be aware of the terminology of lighting design as well as their daily skills.

**Recommended Text
Books:**

For the terminology:

1. Karleen M. and Benya J. M., (2012), "Lighting Design Basics", Wiley Press.
2. Ganslandt, R. and Hofman H., (1992), "Handbook of Lighting Design", Erco Edition, Germany.
3. Cuttle C., (2008), "Lighting by Design", Routledge Press.
4. Publishing.
5. (2009), "Light+Design A Guide to Designing Quality Lighting for People and Buildings, Illuminating Engineers Society", Illuminating Engineering Society.

Reading Text books:

1. Bean R., (2003), "Lighting Interior and exterior", Architectural Press
2. Gordon G., (2015), "Interior Lighting for Designers", Wiley
3. Russell S., (2012), "The Architecture of Light", Conceptnine Press.

**Planned Learning
Activities and Teaching
Method:**

Learning/Teaching Method: This is both theoretical and practical course and students learn about lighting design principles and they will create their own lighting design concept. The course is supported by lectures and verbal-visual presentations and individual desk critiques about their lighting design project.

Assignments: Exams, assignments and term project are individual (except for the announced teamwork). Midterm exam responses will be evaluated for accuracy, thoughtfulness and clarity. Assignments will be evaluated for content, quality of ideas, in terms of lighting design principles. There will be a term project of lighting, which will be made in various steps. The student must complete the assignment, and upload it to web site at the designated time, with name, last name and ID number (late submissions will be evaluated %20 less).

• All students are also obligated to download DIALUX 8.1 software for recitations and final project from the below mentioned website:

<https://www.dial.de/en/software/dialux/download/>

Class Participation: Regular attendance of all enrolled classes is expected. Do not be late for the class. Attendance will be taken through your signature within the first quarter of the class; if you come later you will be considered half-attended. At the end of the Semester, your attendance will be reported on the UBS. Attendance is compulsory and in case of absenteeism of more than 30%, the system will automatically grade you "FX". If you miss a class, it is your responsibility to 'make up' all work, including items discussed in class. The class contribution will be measured in terms of quality, not quantity. If you need to leave early, you should notify your professor at the commencement of the session.

Academic integrity & plagiarism: Academic integrity is the pursuit of scholarly activity based on the values of honesty, trust, fairness, respect and responsibility. Practicing academic integrity means never plagiarizing or cheating, never misrepresenting yourself, never falsifying information, never deceiving or compromising the work of others. Basically, this means, either intentionally or unintentionally, using the words or ideas of someone else without giving credit, it's strictly forbidden.

Course Text books: There is no specific textbook for this course. Students are required to actively participate in the lectures and study the recommended reading text books and also do researches on the variety of architectural presentation techniques.

Key Works: In this course lectures and assignments mainly focuses on user requirements, critical thinking, elements of design and the awareness of functions, and materials relation with lighting techniques.

Specific Rules:

1. Be punctual. Punctuality is a sign of respect toward yourself and the others.
2. Show respect for all the people and property around you.
3. Be responsible for your actions and meet all expectations.
4. Follow directions the first time they are given.
5. Students should raise their hand to signal a question or to answer a question.
6. Students should use the Internet at school for academic purposes only.
7. It is forbidden to record classes with any type of device.

Communication: If you have any question about the syllabus, your responsibilities in the course and assessment procedures please ask your instructor without any delay. Students are encouraged to visit the professor during their Office Hours. If you cannot make it to announced office hours, please make individual arrangements via e-mail. However, do not expect the professor to respond at length via e-mail to questions of content, definition of terms, grading questions etc. If you have a question that requires a substantive response, please set up an appointment to speak with your instructor.

**Course Contents*:
(Weekly Lecture Plan)**

Date	Week	Chapter Topic	Take-home exercise
26.09.24	1	* Syllabus presentation -Introduction to Lighting Technique *Overview of general terminology * What is light-lighting? * What is science of illumination?	
03.10.24	2	Physiological and Psychological Effects of Light	Assignment 1: Choose 3 different material or texture (translucent, opaque, transparent, glossy, scumble, colorfull, monochrome etc. And compare it under daylight and 2 different kind of artificial light sources, takes photos and write down a 250 words brief. Prepare a powerpoint presentation
10.10.24	3	Lighting types according to; - Illuminated place - Orientation of the light - Source of light	Assignment 2: Choosing a sample space. Research: Write down a brief research about the effects of light in this space. Define different types of lighting used in the space and explain how each of these makes you feel about the space? How you perceive the space with this lighting? Use spatial adjectives and their superlatives such as wide,



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			wider, narrower, cosy, squatty, dramatic, distracting, comfortable, cold, spacious, cool, etc., max. 250 words. Prepare a power point presentation
17.10.24	4	-Lighting Elements -Lighting Technique and Calculation	Assignment 3: -Research and decide for lighting elements for term project in the basis of given plan. Prepare a power point presentation of selected light sources.
24.10.24	5	-Basic drawing principles of lighting project, presentation techniques in the project-symbols. -Integrity in space, visual example presentations -Principles and technique for drawing a lighting project -Unity in space, case studies	- Starting to draw lighting project in 2D - Calculations for interior space
31.10.24	6	-Lighting principles and required illumination levels for different functions -Lighting arrangements indoors and outdoors	
07.11.24	7	General review for midterm exam	
	8	MIDTERM EXAM	
21.11.24	9	Introduction to software-dialux * New Project Preparation with DiaLux Assistants * Installation of Lighting Information *Dialux CAD import, windows * DIALux evo user interface * Basic settings *Simple planning of an indoor space Desk Critiques	Introduction to 3D lighting project
28.11.24	10	* Preparation of Room Geometry with DiaLux&autocad *Adding and Subtracting Room Furniture, objects, gaps	Project development

		*Adding and operating lighting equipments and lighting schemes. *Adding lighting planes Desk Critiques	
05.12.24	11	Interior lighting exercises Desk Critiques	Project development
12.12.24	12	Exterior lighting exercises Desk Critiques	Project development
19.12.24	13	Documentation of Dialux Desk critiques on plans and 3D	Project development
26.12.24	14	- General overview and discussion of course outcomes - Preparation of final submission by one to one critiques	Finalizing the lighting project
02.01.25	15	- -Desk critiques	
FINAL SUBMISSION			

* PLEASE NOTE: Details of the syllabus and course schedule are subject to minor changes that will be announced in class.

Grading: Midterm and final exam responses will be evaluated for accuracy, thoughtfulness and clarity. Assignments will be evaluated for content, quality of ideas and clarity of presentation (including both writing and graphics). Students' progress also will be evaluated throughout the semester based on their performance in critiques. Students with the Final Grade below C- (50) are required to repeat the course.

Assessment Methods and Criteria :

METHODS	EFFECTS ON GRADING
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Presentations/Assignments	20%
Midterm Exam	30%
Final Submission	50%

ECTS Workload Table :

ACTIVITIES	NUMBER	HOUR	WORKLOAD
Course Teaching Hours	14	2	28
Assignment(s)	3	6	18
Midterm	1	10	10
Practical Hours	14	2	28
Final Project Preparation	1	16	16
Total Workload	0	0	100
Total workload/25			100/25
ECTS			4

GRADING AND EVALUATION

The students' progress will be evaluated throughout the semester.

Grade Scale:

GRADE	MARKS	VALUE
A+	-	
A	95-100	4.00
A-	85-94	3.70
B+	80-84	3.30
B	75-79	3.00
B-	65-74	2.70

GRADE	MARKS	VALUE
C+	60-64	2.40
C	55-59	2.20
C-	50-54	1.70
D+	45-49	1.30
D	40-44	1.00
F	0-39	0.00