



ECTS COURSE INFORMATION FORM

School/Faculty/Institute	Faculty of Arts, Design and Architecture	
Program	B.Sc. in Interior Design	Required

Course Code	INT 332			
Course Title in English	Space and Technology II			
Course Title in Turkish	Mekan ve Teknoloji II			
Language of Instruction	English			
Type of Course	Flipped Classroom			
Level of Course	Undergraduate			
Semester	Spring			
Contact Hours per Week	Lecture:3	Recitation:	Lab:	Studio:
Estimated Student Workload	93.5 hours per semester.			
Number of Credits	3 ECTS			
Grading Mode	Standard Letter Grade			
Prerequisites	Space and Technology I			
Expected Prior Knowledge	AutoCAD, Photoshop,3D Modelling			
Co-requisites	None			
Registration Restrictions	Only Undergraduate Students			
Overall Educational Objective	To learn the spatial, constructional and technological aspects and design principals of HVAC, acoustics and lighting system in terms of CAD drawings, lighting calculations and documentation.			
Course Description	<p>This is an introductory course that provides a basic understanding of building systems, particularly heating, ventilating and air conditioning (HVAC), lighting and acoustics. Students will examine current research and practical strategies related to HVAC, lightning and acoustical systems. The design criteria and calculations used in interior design will be introduced to the students. The course will examine the student's interior design project through the lens of building systems integration; placing emphasis on understanding technical aspects of systems (construction types, structural, power, lighting, audio-visual, mechanical, plumbing, fire suppression), and its impact on human well-being within an interior environment (thermal comfort, interior air quality, acoustic, etc.).</p> <p>This lecture intends to encourage the students to understand architectural lighting in terms of technological, psychological and functional aspects in order to be able to use the knowledge in their interior design projects. Since lighting effects the way people feel and behave, by learning both scientific properties of light and lighting equipment, and the artistic designs that can be made by lighting, students will be able to enhance the architectural space perception and experience according to the needs of the users, demands of the client and/or space and the environmental factors by creating a balance between quantity and quality of light.</p>			
Course Description in Turkish	Bu ders, ısıtma, soğutma ve havalandırma sistemleri, akustik ve aydınlatma tasarımı, iç mekan tasarımında kullanılan tasarım kriterleri ve hesaplamaları konularında temel bir anlayış ortaya koyan giriş dersidir. Ders kapsamında öğrencilerin, ısıtma, soğutma ve havalandırma sistemleri, aydınlatma ve akustik sistemler ile ilişkili güncel araştırma ve uygulama pratiklerini incelemeleri beklenmektedir. Ders, öğrencinin iç mekan projesini bina sistemleri entegrasyonu merceği aracılığıyla incelenecektir; sistemlerin teknik yönleri (yapı türleri, yapısal, güç, aydınlatma, görsel-işitsel, mekanik, sıhhi tesisat, yangın söndürme) ve iç ortamdaki insan refahı üzerindeki etkisi (termal konfor, iç hava kalitesi, akustik vb.) tartışılacaktır.			

	Bu ders; öğrencilerin mimari aydınlatma tasarımını teknoloji, psikoloji ve fonksiyon açısından benimseyerek, edinecekleri bilgiyi iç mimari projelerinde kullanmalarını hedefler. Işığın insan davranışı ve duygularını etkilemesinin farkındalığına vararak ve ışığın ve aydınlatma armatürlerinin kullanımını hem bilimsel hem de tasarımsal açıdan yorumlayarak; mekan algısını ve insan deneyimini, kullanıcıların ihtiyaçlarına, mekanın ve/veya işverenin ihtiyaçlarına ve de çevresel faktörlere dayanarak, ışık niteliğini ve niceliğini tasarlama bilincine varmalarını amaçlar.	
Course Learning Outcomes and Competences	Upon successful completion of the course, the learner is expected to be able to: 1. understand lighting terminology; 2. analyze quality and quantity of light in a given space; 3. discuss needs of a space in terms of lighting; 4. apply principles of acoustics, HVAC and lighting to the design process, produce a lighting design strategy for a given space; 5. understand the terminology for acoustics; 6. analyze quality and quantity of acoustics in a given space; 7. discuss needs of a space in terms of acoustics; 8. discuss needs of a space in terms of HVAC.	
Relation to Program Outcomes and Competences: N=None S=Supportive H=Highly Related		
Program Outcomes and Competences	Level	Assessed by
	N/S/H	Exam, HW, Seminar.
1- Ability to read, write and speak effectively in Turkish and English, equivalent to a B2 European Language Passport Level in English.	H	Readings, Assignments.
2- Ability to use the knowledge over human-space relationship in terms of perception, experience, and behavior in interior design	H	Readings, Seminars, Assignments
3- Ability to approach to the interior design profession from the perspective of new and evolving theories and practices.	H	Readings, Seminars, Assignments
4-Developing an independent and critical perspective to spatial design	S	Assignments
5- Effective use of interdisciplinary research and design principles in the challenges he/she faces in the field.	N	
6- Acquiring the capability to creatively synthesize and bring together insight and knowledge from different sources to solve problems in designing interior space.	N	
7- Acquiring the ethic and methodological formation to design in line with social responsibility of the interior designer and sustainability of the practice of the profession.	S	Readings, Assignments
8- Approaching to and recognizing design and formation of space as a social and ethical practice.	H	Readings, Seminars, Assignments
9- Having personal traits of creativity, leadership, and inquisitiveness that is required for innovation in design.	N	
10- Ability to pursuing interior design process in the framework of interdisciplinary and multi dimensional relationships in local, national and global contexts.	S	Readings, Discussions, Assignments
11- Ability to present design ideas by utilizing analog and digital presentation tools and in oral and printed form in national and international settings.	N	
12- Creating designs that are sustainable and respectful to diverse user needs, local and regional values, and natural and cultural heritage.	S	Readings
13- Having vision of shaping future while being conscious of the social role and importance of interior design.	H	Readings, Discussions, Assignments
14- Determining personal goals of the lifelong learning towards being an intellectual professional and being able to communicate with individuals and groups in national and international spheres for this purpose.	S	Readings, Assignments

15- Execution of interior design projects according to the national and international standards, professional etiquette, legal and institutional codes.	N	
16- Following most recent researches, discoveries, and practices to reach emerging thoughts, practices, and theoretical perspectives	S	Readings, Discussions, Assignments
17- Defining design problems and forming critical approaches and sharing them with relevant stakeholders in the field after recognizing and criticizing contemporary spatial, environmental, urban and social problems.	S	Readings, Seminars, Assignments
Prepared by and Date	Pinar Ersü, 19.02.2020	
Semester	Spring 2019-2020	
Name of Instructor	Pinar Ersü	
Course Contents	Week	Topic
	1.	<ul style="list-style-type: none"> Architectural and Ergonomic Design Principles regarding acoustics, HVAC and lightning What is the role of HVAC, lighting and acoustical system designers vs. interior designer? Acoustic aspects of a building The properties of Sound Sound of the Space Sound Isolation
	2.	<ul style="list-style-type: none"> Basic Acoustic Principles Study and Control of the Interior Acoustics Sound Isolation Techniques in class exercise
	3.	<ul style="list-style-type: none"> Thermal aspects of a building HVAC principles Outside environment and human needs Heat and Air Flow Humid Air
	4.	<ul style="list-style-type: none"> Thermal comfort and insulation Climate-responsive design
	5.	<ul style="list-style-type: none"> Passive controls, thermal balance Forms of energy and active heating/cooling in class exercise
	6.	<ul style="list-style-type: none"> Lighting aspects of a building Physics of Light Vision and Perception Lighting Design Principles and Systems : Richard Kelley` s three tenets of lighting design Basics of Lighting : Lighting terminology and parameters Color in Lighting : Color rendering index, Color Temperature, Colored Lighting ✓ in class exercise - in groups of 2 photographing 3 different spaces in Uniq Mall and presenting them in class investigating the 3 tenets of lighting design
	7.	<ul style="list-style-type: none"> Light Sources and Luminaire Typologies Illumination Typologies <p>✓ in class exercise - sketching the lighting layout of a hotel room</p>
	8.	<ul style="list-style-type: none"> Visual performance and Visual comfort Lighting Standards Light as material : Mood and atmosphere created by lighting <p>✓ in class exercise - sketching a `feeling` that light evokes and trying to guess what everyone`s sketch is about.</p>

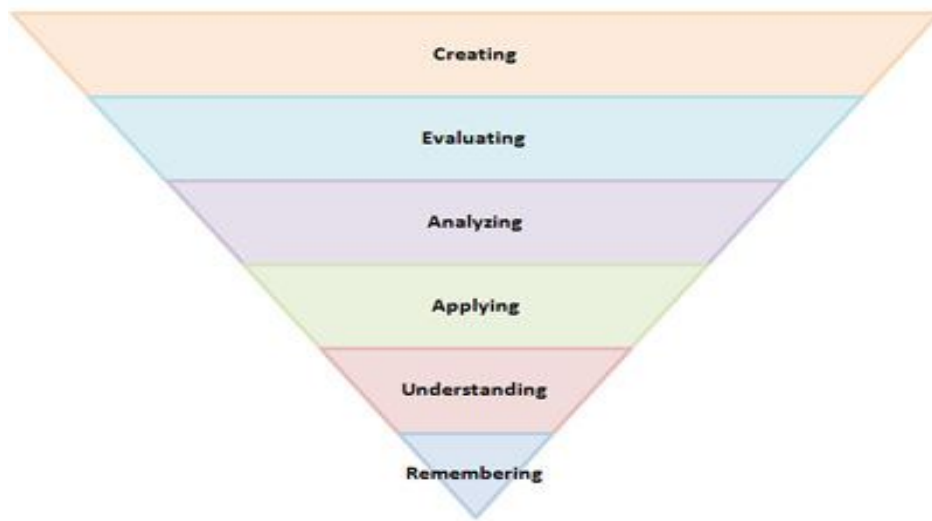
	9.	<ul style="list-style-type: none"> Architectural Integration: Spatial details as lighting fixtures Project Typologies and Examples from the world known designers : Discussion <p>✓ presentations- each student presents a world famous lighting design project in terms of the quality of light, luminaire and illumination typologies.</p>
	10.	<ul style="list-style-type: none"> Dialux: Basics of Lighting calculation and luminaire LDT files
	11.	<ul style="list-style-type: none"> Commissioning Lighting Systems <p>lighting design services; concept design to tender documentation</p> <p>✓ in class exercise - studio project` s mood board design</p>
	12.	<ul style="list-style-type: none"> Lighting Control Systems Control Groups (switch plan) Reflected Ceiling Plan Drawing <p>✓ presentations - studio project` s mood board</p> <p>✓ in class exercise - studio project` s conceptual lighting plan and strategy</p> <p>critiques given according to 3D renderings.</p> <p>✓</p> <p>✓</p>
	13.	✓ presentations : INT 302 Studio project` s lighting design strategy presentations
	14.	✓ presentations : INT 302 Studio project` s lighting design strategy presentations
	15.	final examination period
	16.	final examination period
Required/Recommended Readings		<p>http://www.ereco.com/guide/basics/seeing-and-perception-2224/en/</p> <p>http://www.ereco.com/guide/designing-with-light/architectural-lighting-1874/en/</p> <p>http://www.ereco.com/guide/indoor-lighting/types-of-lighting-1789/en/</p> <p>http://www.zumtobel.com/PDB/teaser/EN/lichandbuch.pdf</p> <p>Allen, Edward & Swoboda D. (2005). How Buildings Work: The Natural Order of Architecture. New York, NY: Oxford University Press, ISBN: 9780195161984.</p> <p>Coppens, James V. Sanders, pp. 560. ISBN 0-471-84789-5. Wiley-VCH, December 1999., 560.</p> <p>Kuttruff, H. (2016). Room acoustics. Crc Press.</p> <p>Egan, M. D. (1988). Architectural acoustics (p. 21). New York: McGraw-Hill.</p> <p>Kinsler, L. E., Frey, A. R., Coppens, A. B., & Sanders, J. V. (1999). Fundamentals of acoustics. Fundamentals of Acoustics, 4th Edition, by Lawrence E. Kinsler, Austin R. Frey, Alan B. Lechner, N (2000). Heating, Cooling, Lighting: Design Methods for Architects. New York, NY: John Wiley & Sons, 2000. ISBN: 9780471241430.</p>
Teaching Methods		Videos, In class assignments, Environmental analysis, Case studies and Studio Design Projects`s lighting design development
Homework and Projects		Readings, Presentations, Journal, In class assignments, Studio Design Projects`s lighting design project booklet.
Laboratory Work		No
Computer Use		Yes
Other Activities		Field work, photographing spaces.
Assessment Methods		<p>-Acoustics and HVAC In-Class Exercise %10</p> <p>-Lighting Journal %10</p> <p>-Studio Project` s Lighting Strategy Presentation %25</p> <p>-Final Book Submission: Studio Project` s Lighting Strategy %40</p> <p>-Attendance and in class participation %15</p>
Course Administration		<p>Email: ersup@mef.edu.tr</p> <p>Students are required to attend % 70 of the classes in theoretical courses. Consequently, absenteeism exceeding 4 weeks (classes) will result in failure.</p> <p>Academic Dishonesty and Plagiarism: YOK Disciplinary Regulation</p>

**ECTS
Student
Workload
Estimation**

Activity	No/Weeks	Hours			Calculation	Explanation
	No/Weeks per Semester (A)	Preparing for the Activity (B)	Spent in the Activity Itself (C)	Completing the Activity Requirements (D)		
Lecture	14	1	3	1	70	$A*(B+C+D)$
Lab/Studio etc.						
Midterm(s)						$A*(B+C+D)$
Assignment, Project, Presentation	3	2	0,5	2	13,5	$A*(B+C+D)$
Final Examination/Project	1	8	1	1	10	$A*(B+C+D)$
Total Workload					93,5	
Total Workload/25					3,74	
ECTS					3	

Key verbs for cognitive domain in writing learning outcomes and competences:

Bloom's Taxonomy



Revised edition by Lorin Anderson (a student of Bloom)

Key Verbs:

Remembering: defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states.

Understanding: comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates.

Applying: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.

Analyzing: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates.

Evaluating: appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports.

Creating: categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes.

Key verbs for affective domain in writing learning outcomes and competences:

Receiving Phenomena: asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits, erects, replies, uses.

Responding to Phenomena: answers, assists, aids, complies, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes.

Valuing: completes, demonstrates, differentiates, explains, follows, forms, initiates, invites, joins, justifies, proposes, reads, reports, selects, shares, studies, works.

Organizing: adheres, alters, arranges, combines, compares, completes, defends, explains, formulates, generalizes, identifies, integrates, modifies, orders, organizes, prepares, relates, synthesizes.

Internalizing values: acts, discriminates, displays, influences, listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, verifies.