

TISHK INTERNATIONAL UNIVERSITY FACULTY OF ENGINEERING Department of ARCHITECTURE, 2021-2022 Spring Course Information for ARCH 432 LIGHT & ACOUSTIC IN ARCHITECTURE					
<b>Course Name:</b>		LIGHT & ACOUSTIC IN ARCHITECTURE			
<b>Code</b> ARCH 432	<b>Regular Semester</b> 8	<b>Theoretical</b> 2	<b>Practical</b> -	<b>Credits</b> 2	<b>ECTS</b> 2
<b>Name of Lecturer(s)- Academic Title:</b>		Hassan Hassoon - PhD			
<b>Teaching Assistant:</b>		Tara Sami			
<b>Course Language:</b>		-			
<b>Course Type:</b>		Main			
<b>Office Hours</b>		1 hr after lecture time			
<b>Contact Email:</b>		hassan.hassoon@tiu.edu.iq Tel:1462			
<b>Teacher's academic profile:</b>		Assistant Professor Lecturer in Architecture and Interior Design Departments Education: B.Sc University of London / Queen Mary College London UK 1972, MSc StrathClyde University Scotland UK 1981, PHd Bristol University England UK 1989			
<b>Course Objectives:</b>		Fundamental of sound and noise , sound pressure and sound pressure level, combining sound sources, To calculate the sound pressure and sound pressure levels. reverberation, and reverberation time, sound transmission in building, noise rating curves, the phon, sound criteria curves, applications, sound attenuation, room sound absorption coefficient, to Know what are power supply and lighting design in building, the physics of lighting and light sources, luminescence illuminance ,power supply in build spaces. types of lighting. lighting measurements lighting calculations for design project			
<b>Course Description (Course overview):</b>		-			
COURSE CONTENT					
Week	Hour	Date	Topic		
1	2	6-10/2/2022	Introduction to fundamental of sound, sound measurements, the Bel and Decibel		
2	2	13-17/2/2022	sound rating curves, sound criteria curves		
3	2	20-24/2/2022	sound propagation and sound attenuation in build space, reverberation		
4	2	27/2-3/3/2022	sound pressure sound pressure level, sound intensity , the inverse square law.		
5	2	6-10/3/2022	sound absorption coefficients for different materials.		
6	2	27-31/3/2022	acoustic calculation of ventilating systems.		
7	2	3-7/4/2022	sound level scales, The A scale, the B scale and the C scale		
8	2	10-14/4/2022	Midterm Exam		
9	2	17-21/4/2022	applications of acoustics in buildings		
10	2	24-28/4/2022	Introduction to lighting		
11	2	8-12/5/2022	uminous lumens, Illuminance Lux, and luminance cd/m2		
12	2	15-19/5/2022	measures used in daylighting Design.		
13	2	22-26/5/2022	day-factor used in daylighting design		
14	2	29/5-2/6/2022	project presentation		
15	2	5-9/6/2022	Final Exam		

16	2	12-16/6/2022	Final Exam
<b>COURSE/STUDENT LEARNING OUTCOMES</b>			
1	To understand the fundamental of sound associated with comfort for built environment		
2	To calculate sound pressure and sound pressure level, combination of sound sources		
3	To estimate the sound level in build space, using the sound criteria curves, equal loudness countours.		
4	To understand the physics of lighting, types of lighting, power supply in build space, illuminace, luminescence and applications.		
5	To apply natural and artificial lighting in build space, lighting efficacy		
<b>COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES</b> (Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )			
<b>Program Learning Outcomes</b>			<b>Cont.</b>
1	Apply problem-solving skills in the architectural context.		P
2	Demonstrate knowledge of architectural history, theory, and practice in solving architectural design problems.		A
3	Utilize freehand drawing, architectural graphics, and model building skills in solving architectural design problems.		P
4	Utilize the computer as a tool in a wide range of documentation and presentation applications, using CAD, 3-D visualization and rendering, electronic image composition and editing software.		
5	Apply knowledge of mathematics, science, engineering and technology in solving architectural design problems.		P
6	Develop designs that meet desired needs within realistic economic, social, political, and cultural constraints.		A
7	Develop designs that fulfill the environmental, health & safety, and sustainability considerations.		P
8	Demonstrate team-working skills and show the ability to work collaboratively with various design teams involved in the building industry, and collaborate and negotiate with clients.		A
9	Demonstrate the necessary knowledge for applying laws, codes, regulations, standards and practices in relation to building construction systems.		I
10	Show their ideas through high quality drawing skills and artistic sense.		P
11	Utilize their skills to address professional and ethical responsibilities, diversity and commitment to the work field.		
12	Suggest solutions and techniques for engaging in life-long learning and knowledge about contemporary issues.		
<b>Prerequisites (Course Reading List and References):</b>		none	
<b>Student's obligation (Special Requirements):</b>		to attend by taking notes, participate, active discussion with critical thinking approach to solve sound problems in a suggested built environment	
<b>Course Book/Textbook:</b>		ASHRAE American Standard for Heating ventilation and Air-Conditioning Engineering.	
<b>Other Course Materials/References:</b>		internet, web pages in the integration of lighting with natural lighting, ASHRAE design hand book	
<b>Teaching Methods (Forms of Teaching):</b>		Lectures, Presentation, Project, Assignments, , ,	
<b>COURSE EVALUATION CRITERIA</b>			
<b>Method</b>		<b>Quantity</b>	<b>Percentage (%)</b>
Participation		1	5
Quiz		1	15
Project		1	20
Midterm Exam		1	20
Final Exam		1	40
	<b>Total</b>		<b>100</b>
<b>Examinations:</b> Essay Questions, True-False, Multiple Choices, Short Answers, Matching, , ,			

**Extra Notes:**

<b>ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD</b>			
<b>Activities</b>	<b>Quantity</b>	<b>Workload Hours for 1 quantity*</b>	<b>Total Workload</b>
Theoretical Hours	16	2	32
Practical Hours	16	0	0
Final Exam	1	32	32
Participation	1	3	3
Quiz	1		0
Project	1		0
Midterm Exam	1		0
<b>Total Workload</b>			<b>67</b>
<b>ECTS Credit (Total workload/25)</b>			<b>2.68</b>

**Peer review**

Signature:

Name:

Lecturer

Signature:

Name:

Head of Department

Signature:

Name:

Dean