

Zarqa University

Faculty of Engineering

Department: Architecture

Course title: Illumination and
Acoustics 0908423



Prerequisite: 0908372

Instructor:

Lecture's time :

Semester:

Office Hours:

Course description:

This course studies the physical characteristics of the light and its main principles, the light calculations, natural and artificial lighting design principles and its implementation in architecture. It provides full understanding of the physical characteristics of acoustics and its main principles. Study acoustics resources inside the buildings, measure acoustics levels, and acoustics design principles in building, acoustics control and isolation. Introduce the student to measurement tools and materials that are used in the practical implementations for the illumination and acoustics fields of architecture.

Aims of the course:

After completing this class, students will be:

1. Able to understanding main definitions and calculations in acoustics, Natural and artificial lighting.
2. Able to define and solve the acoustical problems in architectural spaces.
3. Able to create many alternatives for solving the design to achieve day lighting.
4. Able to Application of acoustical design principles in architectural design.

Intended Learning Outcomes (ILOs):

1. **Knowledge skills: with ability to** Know of main definitions, calculations, Measurement tools and units, in acoustics and Illumination field.
2. **Understanding skills: with ability to** understand the requirements and principles of acoustical design.
3. **Analysis skills: with ability to** Analyze and evaluate case studies Related to illumination and acoustics fields.
4. **Application and design skills: with ability to** create many alternatives for solving the acoustical problems in design.

Course structures:

Week	C.	ILOs	Topics	Teaching	Assessment
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	Hrs		Procedure	methods	
1 st week 14/10/2018			<ul style="list-style-type: none"> - Introduction to the course. - Sound Reflection, Sound absorption, Sound Transmission. - Materials characteristics in terms of sound insulation, absorption and reflection. - Sound insulation. - Noise criteria. - Background noise. - Requirements and principles of acoustical design. - Case studies. 	<ul style="list-style-type: none"> - Theory lectures (data show) - Videos - Reports - discussion 	
2 nd week 21/10/2018					
3 rd week 28/10/2018					
4 th week 4/11/2018					
5 th week 11/11/2018					
6 th week 18/11/2018					
7 th week 25/11/2018					
8 th week 2/12/2018					First Exam 29/11/2019
9 th week 9/12/2018					
10 th week 16/12/2018			<ul style="list-style-type: none"> - Introduction to artificial and natural lighting in architectural spaces. - Artificial lighting calculation. - Identify day lighting techniques. - Day lighting calculation. 	<ul style="list-style-type: none"> - Theory lectures (data show) - Videos - Reports - discussion 	
11 th week 23/12/2018					
12 th week 30/12/2018					Second Exam 3/1/2019
13 th week 6/1/2019					
14 th week 13/1/2019					reports presentation
15 th -16 th week			Final Exam	Final Exam 31/1/2019	

References:



- تقنيات الإضاءة الطبيعية والصناعية، أ.د. رزق شعبان : الناشر: مكتبة الفنون: الكتاب حائز على جائزة جامعة فيلادلفيا لأحسن كتاب مؤلف عام 2007.
- الهندسة الصوتية في العمارة : أ.د رزق شعبان، الناشر: مكتبة الفنون، 2008 كتاب مقرر من قبل الجامعة الأردنية.

Assessment Methods:

Methods	Grade	Date
First Exam	20%	29/11/2019
Second Exam	20%	3/1/2019
Report, Assignment, H.W	10%	
Final Exam	50%	31/1/2019

