1	**Course title**	Illumination and Acoustics
2	**Course number**	0932371
3	**Credit hours (theory, practical)**	2+1
	Contact hours (theory, practical)	4
4	**Prerequisites/corequisites**	
5	**Program title**	Architecture
6	**Program code**	
7	**Awarding institution**	
8	**School**	Engineering
9	**Department**	Architecture
10	**Level of course**	BSc
11	**Year of study and semester (s)**	Sem.1 & 2
12	**Final Qualification**	
13	**Other department (s) involved in teaching the course**	
14	**Language of Instruction**	English & Arabic
15	**Date of production/revision**	yearly

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.
Office hours: 6
Phone: 0796646839
Email: rizeqhammad@yahoo.com

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

18. Course Description:

As stated in the approved study plan.
Basic principles of lighting and acoustics and their effect on the design of buildings. Noise abatement and insulation of buildings against noise pollution. Applications using instruments for measurement of illumination and acoustics.

19. Course aims and outcomes:

A- Aims: Acoustics designing halls with an accepted sound field
B- Lighting: to provide spaces with good lighting

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to

Acoustics: 1- understanding acoustics terms, sound, noise, frequency, decibel, absorption, insulation
2- be aware of the noise affect on human, understanding noise dose
3- measuring noise and absorption coefficient, insulation
4- Estimating reverberation time in rooms, and amount of absorption needed
5- applying building codes in acoustics, specially Jordan code

Lighting: 1- understanding lighting terms, flux, intensity, illuminance, luminance
2- using measuring equipments and measuring lighting on rooms and comparing with building cods
3- estimating day lighting in rooms during the initial design
4- estimating artificial lighting level in rooms
5- understanding different light sources, their properties and where to use

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Acoustics: Introduction and course outline	1	R. Hammad			
Acoustics terms	2+3	R. Hammad			
Human ears and haring mechanism		R. Hammad			
Room acoustics: resonance	4	R. Hammad			
reflections	5	R. Hammad			
Reverberation time	6	R. Hammad			
Absorption&	7+8	R. Hammad			

Insulation:					

Mid exam: 9

Lighting:

Lighting terms: 10+11

Lighting sources 12+13

Estimating artificial lighting 14

Estimating day lighting 15

General recommendations 16

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

Lectures

Measuring using real equipment

Applying the result in designing several rooms

Measurements on a full scalespecimen and on scale model

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

1- Several reports on measuring, the background noise and lighting levels on real rooms
2- Measuring the absorption coefficients and surface reflection
3- Measuring the sound insulations
4- Measuring the affect of room configuration on lighting level

23. Course Policies:

A- Attendance policies: recording student attendance on every lecture, with maximum 15% absence

B- Absences from exams and handing in assignments on time:0 mark if no reason

C- Health and safety procedures: during the laboratories there is a technician supervisor

D- Honesty policy regarding cheating, plagiarism, misbehavior: according to the university regulations

E- Grading policy: 40% 1st exam, 20% reports and 40% final exam

F- Available university services that support achievement in the course: acoustic lab and lighting lab with required instruments and spaces

24. Required equipment: (Facilities, Tools, Labs, Training….)

The acoustic & lighting labs are equipped with all required equipments

25. References:

Required book (s), assigned reading and audio-visuals:
R. Hammad, 2017 Architecture Acoustics, 4 editition
R. Hammad 2016, Architecture lighting 1st edition

Recommended books, materials, and media:
Acoustics:
Sound Research Lab.: !976 " practical Building Acoustics" SRL Holbrook, Sudbury
Rettinger, M, 1989 " Handbook of Architecture Acoustics and Noise Control" McGraw Hill
Fuuler Moor, 2000 "Concept & practice of Architectural Day lighting" Van Nostrand Reinhold com. N. Y
Sorcar, P. 1986 " Architectural Lifgting for Comercial Interior" John Willy & sons

26. Additional information:

Name of Course Coordinator: --Rizeq Hammad----------Signature: -Hammad----------
Date: -2022----------

Head of curriculum committee/Department: ---------- Signature: ----------

Head of Department: ---------- Signature: ----------

Head of curriculum committee/Faculty: ---------- Signature: ----------

Dean: ---------- -Signature: ----------