Engineering and Technology Faculty - Building Engineering Department

Course OUTLINE

Environmental design for buildings /Acoustics	**(12310576)**	**التصميم البيئي للمباني / صوتيات**
Instructor: Eng. Wala' OMAR (mail : wala_omar@hotmail.com)		**م. ولاء عمر**

Course description:

This course aims at understanding the physical properties of sound, the perception of sound, introduction to ancient building acoustics, building materials and sound, sound reflection, absorption, transmission, room acoustic design, room acoustic calculation, sound transmission in buildings, noise control, linked rooms, introduction of architectural acoustics calculations and measurement techniques.

Course objectives:

- Examine how sound is generated and propagates as a principle for architectural acoustic design and explore how humans perceive sound as a basic principle in acoustic design.
- Differentiate among materials and practices for increasing sound isolation within the interior of a building.
- Ability to provide a design with an acoustic comfort in buildings.

***Topical outline*:** *(Note: Sequence of topics below may be modified as the semester proceeds)*

- Introduction and definitions
- Physical properties of sound
- Introduction to ancient building acoustics
- Sound reflection, absorption, transmission
- Building materials and sound
- Room acoustic calculation
- Sound transmission in buildings
- Noise control

Course evaluation

25% First exam
25% Second exam
40% Final exam
10% Participation

Textbook and references

- Benjamin Stein and John S. Reynolds, Mechanical and Electrical Equipment for Buildings, 11th Edition, 2010, John Wiley &Sons.