هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title: Lighting and Acoustics (الإضاءة والصوتيّات)
Course Code: IND 667
Program: Interior Design Program
Department: Architecture Department
College: College of Engineering and Information Technology
Institution: Onaizah Private Colleges
Version: Third Version
Last Revision Date: 2025-05-20

Previous Course Specification
https://drive.google.com/file/d/1KtynQ0_CFMhzIpNXIQ7ytn8H_7zD-lAu/view

Table of Contents:

A. General information about the course:

Course Identification	
1. Credit hours:	2 Credit Hours [Theoretical]
2. Course type a. University ☐ College ☐ Department ☒ Track ☐ Others ☐ b. Required ☒ Elective ☐	
3. Level/year at which this course is offered:	Sixth Level / Third Year
4. Course general Description This course explores the fundamental principles and practical applications of lighting and acoustics within interior environments. Students will examine how natural and artificial lighting, as well as sound behavior and control, influence spatial perception, functionality, and user experience in residential, commercial, and institutional settings. The lighting component addresses various light sources, fixture types, lighting design strategies, calculations, and energy-efficient solutions. The acoustics component focuses on principles of sound transmission, absorption, reflection, and control, emphasizing material selection and spatial planning to optimize acoustic performance. Through lectures, technical analysis, and design-based exercises, students will develop the ability to integrate lighting and acoustic solutions that enhance user well-being, support environmental goals, and reflect design intent. The course also introduces applicable standards and codes to ensure safety, sustainability, and performance in interior design practice.	
5. Pre-requirements for this course (if any): IND 566	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s) This course aims to provide students with a comprehensive understanding of the technical and aesthetic roles of lighting and acoustics in interior design. It introduces fundamental principles of light and sound behavior and guides students in analyzing how these environmental elements influence spatial perception, functionality, and user well-being. Students will learn to evaluate and apply appropriate lighting systems and acoustic treatments based on project requirements, user needs, and applicable building codes. The course emphasizes the integration of lighting and acoustics into the design process, considering energy efficiency, sustainability, safety, and visual and auditory comfort. By the end of the course, students will be able to propose functional, efficient, and contextually responsive lighting layouts and acoustic solutions that enhance interior environments in a professional and responsible manner.	

1. Teaching mode

No.	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom		
2	E-learning		
3	Hybrid		

No.	Mode of Instruction	Contact Hours	Percentage
	• Traditional classroom • E-learning		
4	Distance learning	30	100%

2. Contact Hours (based on the academic semester)

No.	Activity	Contact Hours
1	Lectures	30
2	Laboratory/Studio	
3	Field	
4	Tutorial	
5	Others (specify)	
Total		**30**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
IND 667.C LO.K.1	Identify the basic principles of lighting design in interior spaces, including standard illumination levels that support visual comfort and well-being	K.1(التصميم برنامج الداخلى Interior Design)	Primary: Lecture Additional: Independent Study	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)
IND 667.C LO.K.2	Identify the basic principles of acoustic design in interior spaces based on acoustical performance criteria and functional requirements	K.1(التصميم برنامج الداخلي Interior Design)	Primary: Lecture Additional: Research (Individual or Group)	Formative: Research Summary (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
IND 667.C LO.K.3	Describe the basic elements of lighting and acoustic design in interior spaces, including the materials and fixtures used to achieve functional and aesthetic performance	K.2(التصميم برنامج الداخلى Interior Design)	Primary: Lecture Additional: Research (Individual or Group)	Formative: Homework Summative: Research Summary (Rubric)
2.0	**Skills**			

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
IND 667.C LO.S.1	Design interior lighting and acoustic systems using appropriate tools, techniques, and fixture selection while considering sustainability, indoor environmental quality, and applicable codes	S.1(التصميم برنامج الداخلى Interior Design)	Primary: Presentations (Individual or Group) Additional: Project or Research (Individual or Group)	Formative: Research Assessment (Rubric) Summative: Presentation (Individual or Group) (Rubric)
3.0	**Values, Autonomy, and Responsibility**			
IND 667.C LO.V.1	Demonstrate responsible and independent decision-making in the selection and application of lighting and acoustic solutions within interior design projects	V.3(التصميم برنامج الداخلى Interior Design)	Primary: Independent Study or Research Additional: Discussion (or similar active learning strategies)	Formative: Observation (Instructor/ Students/ Committee) (Rubric) Summative: Case Study (Individual or Group)

C. Course Content

No.	List of Topics	Contact Hours
1	Introduction & FDM.	2
2	Lighting and human health the amount of healthy lighting needed Lighting sources: - What is light? - What are the main sources of light? Activity: Group Work: Light Design & Activity type.	2
3	Natural light (day light or sun light) source in interior design: - Daylighting/ Sunlight. - Sources in interior design.	2
4	Types of day lighting technologies: - Active day lighting. - Passive day lighting.	2
5	Artificial light sources.	2
6	Artificial light sources: - Incandescent lamp. - Compact fluorescent lamp. - Fluorescent tube. - Discharge lamps: ▪ Low pressure discharge lamps. ▪ High pressure discharge lamps. ▪ High-intensity discharge lamps. - Light Emitting Diode (LED). Activity: Class Discussion: Brightness + Lighting & psychology.	2
7	Artificial Light Sources: - Discharge lamps: low pressure, high pressure, and high intensity discharge lamps. - Light Emitting Diode (LED). Activity: Group Work: Light design & Ambience.	2
8	Types of Light fixtures according to light function: - Ambient (general lighting). - Task. - Accent. - Informational lighting/Guidance Lighting. - Decorative lighting.	2
9	Midterm.	2

10	Interior Lighting Schematics Drawings: - Interior Plan. - Reflected Ceiling Plan (RCP). - Dimension Plan. Activity: Class Discussion: Lighting Schematics terminologies.	2
11	Interior Lighting Schematics Drawings: - Sections. - Elevations. - Light fixtures documentation (lighting schedule).	2
12	Introduction what is the acoustic design.	2
13	The acoustic design principles in the interior space. Activity: Class Discussion: Acoustics Interior Applications.	2
14	Acoustic Solutions.	2
15	Acoustic interior materials. Activity: In-Class Case study.	2
Total		**30**

D. Students Assessment Activities

No.	Assessment Activities*	Assessment Timing (in Week No.)	Percentage of Total Assessment Score
1	Research Summary (Rubric)	3rd	5%
2	Homework	7th	5%
3	Presentation (Individual or Group) (Rubric)	12th	5%
4	Written Exam (Midterm Exam) (MCQ or Essay / F2F or Online)	8th - 10th	25%
5	Written Exam (Final Exam) (MCQ or Essay / F2F or Online)	16th	45%
6	Research Assessment (Rubric)	10th	5%
7	Quiz (Online or F2F)	4th	5%
8	Observation (Instructor/ Students/ Committee) (Rubric) + Case Study (Individual or Group)	13th	5%
			100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	- The architecture of light: architectural lighting design concepts and techniques. (2nd Edition) Author: Sage Russell. - Friebe, I. (2007). Light Art and the Art of Lighting Design, PLDC 1st Global Design Conference. London, United Kingdom. - Liljefors, A (1999): Lighting – visually and physically. Lighting Department, Arkitekturskolan, KTH,Stockholm. - Ganslandt, R.; Hofmann, H., 1992 – Handbook of Lighting Design, ERCO Edition. - Major, M.; Speirs, J.; Tischhauser, A., 2005 - Made of Light, The Art of Light and Architecture,Birkhauser - Publishers for Architecture - Basel. Boston. Berlin - Brandston, H., 2008 - Learning to see, A Matter of Light. IESNA. - Matorski Z. Influence of new lighting technologies into electrical networks and installations. EURO-SINE Electrical networks and Installations in EU Legislation Acts. SEP – Association of Polish Electrical Engineers. Silesian University of Technology and Silesian Chamber of Civil Engineers. Ustron, Poland. pp. 125-134. - Mantorski Z. Energy efficient lighting in buildings – Annex 45. XIV National Lighting Conference, Lighting techniques 2005. pp. 73-74. - Friebe, I. (2007). Light Art and the Art of Lighting Design, PLDC 1st Global Design Conference. London, United Kingdom.
Supportive References	None.
Electronic Materials	None.
Other Learning Materials	None.

2. Required Facilities and Equipment

Items	Resources
Facilities (Classrooms, Laboratories, Exhibition Rooms, Simulation Rooms, etc.)	Lecture Hall, Computer Lab.
Technology Equipment (Projector, Smart Board, Software)	Data Show, Smart Board, Applications Software
Other Equipment (Depending on the nature of the specialty)	None.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Peer Reviewer	Direct (peer classroom observation according to the approved Rubric)
Effectiveness of students' assessment	Faculty/Instructor	Direct (analysis of CLOs assessment results and grade distributions)
Quality of learning resources	Students	Indirect (course evaluation survey)
The extent to which CLOs have been achieved	Faculty/Instructor	Direct (CLOs assessment and analysis of results according to CLOs targets)
	Students	Indirect (Students through course evaluation survey)
Commitment to learning and teaching strategies and assessment methods included in the program and course specifications	Peer Reviewer	Direct (Peer- classroom observation according to the approved Rubric in OC-QMS)
	Department Chair through Students Focus Groups	Indirect (Chair – survey questions to a focus group of students according to OC QMS)
Action Plan Continuity (Closing the Loop)	QAC (Quality Assurance Committee)	Direct (periodic review of course reports and submitting comments to course instructor/coordinator)
Instructor's Support to Students	Students	Indirect (course evaluation survey)

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Department of Architecture Council
REFERENCE NO.	11
DATE	2023-05-09

Learning outcomes of this course, as well as CLOs/Teaching Strategies/Assessment Methods matrix have been evaluated and reviewed by multiple OC parties according to OC-QMS. You can access results of these final reviews by scanning the QR code on the right, which contains a link to the reviews on OC-E-QMS.

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