هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title: Computer Aided Design (2) (التصميم بالحاسب الآلي)
Course Code: IND 442
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/1ovtscq55gywOyiiVMgo7ZrXBxWkl1eK7/view

Table of Contents:

A. General information about the course:

Course Identification	
1. Credit hours:	3 Credit Hours [1 Theoretical + 2 Practical]
2. Course type a. University ☐ College ☐ Department ☒ Track ☐ Others ☐ b. Required ☒ Elective ☐	
3. Level/year at which this course is offered:	Fourth Level / Second Year
4. Course general Description This course deepens students' digital design competencies through the application of Building Information Modeling (BIM) and parametric modeling, with a primary focus on Revit Architecture. Building on foundational computer-aided design (CAD) skills, students will learn to produce comprehensive 2D and 3D documentation—including floor plans, sections, elevations, and perspectives—that meet professional interior design standards. The course emphasizes the development of data-rich digital models that integrate spatial planning, construction detailing, and material specifications. Students will explore intelligent modeling practices to coordinate and visualize complex interior environments. Additional focus is placed on understanding project workflows, enhancing digital collaboration, and ensuring interoperability between BIM platforms to simulate real-world interior design documentation and communication processes.	
5. Pre-requirements for this course (if any): CSC 105, CSC 111, IND 341.	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s) The main objective of this course is to develop students' advanced proficiency in Building Information Modeling (BIM) using Revit software. It equips students with the technical and creative skills necessary to produce accurate parametric 2D and 3D drawings, visualizations, and documentation for interior design applications. The course emphasizes the integration of spatial elements, material rendering, technical detailing, and design annotations within a coordinated digital environment. It also prepares students to participate in collaborative project workflows and produce professional, industry-compliant documentation that supports interior design development, client communication, and construction coordination.	

1. Teaching mode

No.	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	75	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

2. Contact Hours (based on the academic semester)

No.	Activity	Contact Hours
1	Lectures	15
2	Laboratory/Studio	60
3	Field	
4	Tutorial	
5	Others (specify)	
Total		**75**

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			
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2.0	Skills			
IND 442.C LO.S.1	Create parametric, object-based digital models for interior design projects, producing drawings, documentation, and visualizations using BIM software tools and techniques	S.5(التصميم برنامج الداخلى Interior Design)	Primary: Interactive Lecture \ Demonstration Additional: Tutorial	Formative: Practical Assessment (Rubric) Summative: Project Assessment (Rubric)
IND 442.C LO.S.2	Analyze and modify interior design elements within a parametric, object-based modeling environment using 2D and 3D software tools to improve design outcomes and documentation quality	S.3(التصميم برنامج الداخلى Interior Design)	Primary: Discussion (or similar active learning strategies) Additional: Lab Work/Experiment	Formative: Project Assessment (Rubric) Summative: Student Portfolio
IND 442.C LO.S.3	Communicate interior design solutions through	S.6(التصميم برنامج الداخلى Interior Design)	Primary: Project or Research	Formative: Presentation

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	BIM-based modeling by producing coordinated 2D and 3D deliverables that effectively present design intent and project information to stakeholders		(Individual or Group) Additional: Tutorial	(Individual or Group) (Rubric) Summative: Project Assessment (Rubric)
3.0	**Values, Autonomy, and Responsibility**			
IND 442.C LO.V.1	Demonstrate responsibility and autonomy in making design decisions throughout the development of interior design projects	V.3(التصميم برنامج الداخلى Interior Design)	Primary: Independent Study or Research Additional: Lab Work/Experiment	Formative: Observation (Instructor/ Students/ Committee) (Rubric) Summative: Student Portfolio

C. Course Content

No.	List of Topics	Contact Hours
1	Introduction to Revit: - BIM with Revit. - Language of Revit. - Interface. - What we mean by Templates. - Ribbons of Revit. - What is the deference between Categories & Families?	5
2	Preparing for the Project1: - Make new project. - Selecting the template. - Prepare Project information's. - Prepare units. - Prepare my interface properties.	5
3	Preparing for the Project2: - Modify Tools. - Model line. - Specify the levels. - Make building grid	5
4	Build Your House1: - Walls properties. - Roof properties. - Floor properties. - Ceiling properties.	5
5	Build Your House2: - Place doors. - Place window. - Openings. - Place a component. - Model group. - Place columns	5
6	Circulation Elements: - Stair properties (Custom stair – Stair by sketch). - Railing properties. - Ramp properties.	5
7	Midterm Small Project.	5

8	<u>Create & View Part 01:</u> - Room & Area. - Colors fill legend. - Dimensions. - Details. - Text. - Element tagging.	5
9	<u>Create & View Part 02:</u> - Sections. - Type of elevations. - Callouts. - Visibility/Graphics. - Thin Lines. - Switch windows. - Windows interface.	5
10	<u>Create & View Part 03:</u> - 3D view. - Camera view. - Walk through. - Rendering.	5
11	<u>Create & View Part 03:</u> - 3D view. - Camera view. - Walk through. - Rendering.	5
12	<u>Massing:</u> - Mass in place. - Model in Place. - Create Wall/Roof/Floor/Certain system bye face.	5
13	<u>Printing and Plotting:</u> - Create simple sheets. - Printing to scale (PDF – Printer).	5
14	Practice.	5
15	Final Exam Project.	5
Total		**75**

D. Students Assessment Activities

No.	Assessment Activities*	Assessment Timing (in Week No.)	Percentage of Total Assessment Score
1	Student Portfolio (Final submission)	15th	15%
2	Project Assessment (Rubric) (Final submission)	15th	30%
3	Practical Assessment (Rubric) (Midterm submission) (Practical)	8th 3rd - 13th	40%
4	Presentation (Individual or Group) (Rubric)	10th	10%
5	Observation (Instructor/ Students/ Committee) (Rubric)	3rd - 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	- Autodesk Revit 2020 Architecture - Munir Hamad. - Eddy K., James V., Mastering Autodesk Revit Architecture 2015, Autodesk Official Press.
Supportive References	- Autodesk website: Revit architecture tutorials: https://www.autodesk.com/education/home
Electronic Materials	- Autodesk website: Revit architecture tutorials: https://www.autodesk.com/education/home
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)	Smart Board or multi-media projector with desk-top or lap-top computer. Auto-desk Revit and its plugins.
Other Equipment (Depending on the nature of the specialty)	Revit software (Latest version).

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.

Click Here