School of Fine Arts Design and Architecture / Architecture (English)

2023 - 2024 Academic Year

INTRODUCTION to BIM

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
INTRODUCTION to BIM	ARC4215261	Spring Semester	1+2	2	4

Prerequisites Courses	
Recommended Elective Courses	Construction Management with BIM.
Language of Instruction	English
Course Level	First Cycle (Bachelor's Degree)
Course Type	Elective
Course Coordinator	Assist.Prof. Jülide BOZOĞLU
Name of Lecturer(s)	Lect.Dr. Gizem ŞİMŞİR
Assistant(s)	A teaching assistant is not assigned.
Aim	This course aims to demonstrate how architectural and engineering design functions are impacted by Building Information Modeling (BIM) and helps students understand the fundamentals and practical uses of information technologies in the construction industry. Course objectives are:1. to understand the concepts of Building Information Modeling (BIM),2. to review software and technology available for BIM, 3. to understand how to use a model created by a BIM software, 4. to use Revit as a design software to create and present a 3D design project.
Course Content	This course contains; Introduction to BIM ,Integrated Design with BIM ,BIM tools and parametric modeling ,Interoperability,BIM application areas ,BIM for Green Buildings ,Level of Design (LOD) ,BIM for designers ,BIM for contractors and subcontractors,BIM for owners and facility managers,The future of BIM and the industry ,Collaboration Workshop ,Hands on Revit.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
An ability to apply knowledge of mathematics, science, and engineering to understand the concepts of Building Information Modeling (BIM).	10, 37, 4, 9	E
An ability to design and conduct experiments; analyze and interpret data to understand how to use a model created by a BIM software.	2, 37, 6	E, F
An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability using Revit as a design software to create and present a 3D design project.	10, 19, 6	E, G
A knowledge of contemporary issues and the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context through understanding the concepts of Building Information Modeling (BIM) and reviewing software and technology available for BIM.	10, 9	
An ability to function on multi-disciplinary teams through BIM Collaboration workshop.	11, 37, 6	
An ability to communicate effectively using BIMs.	2, 6	E
A recognition of the need for, and an ability to engage in, life-long learning reviewing software and technology available for BIM.	6	
An ability to use techniques, skills, and modern tools in engineering practice understanding how to use a model created by a BIM software.	6	

Teaching Methods	10: Discussion Method, 11: Demonstration Method, 19: Brainstorming Technique, 2: Project Based Learning Model, 37: Computer-Internet Supported Instruction, 4: Inquiry-Based Learning, 6: Experiential Learning, 9: Lecture Method
Assessment Methods	E: Homework, F: Project Task, G: Quiz

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	Introduction to BIM	Reading
2	Integrated Design with BIM	Reading
3	BIM tools and parametric modeling	Reading
4	Interoperability	Reading
5	BIM application areas	Reading
6	BIM for Green Buildings	Reading
7	Level of Design (LOD)	Reading
8	BIM for designers	Reading
9	BIM for contractors and subcontractors	Reading
10	BIM for owners and facility managers	Reading
11	The future of BIM and the industry	Reading
12	Collaboration Workshop	Software Access and Educational Licensure
13	Hands on Revit	Software Access and Educational Licensure, Assignments

Evaluation Methods	**Weight(%)**
Midterm Exam	50
General Exam	50

Resources
Lecture Slides, Instructions, Video Tutorials and Readings shared by the instructor. Suggested Practice Book: ASCENT. "Autodesk Revit 2024 Architecture Fundamentals", SDC Publications, 2023.C., Teicholz, P., Sacks, R., and Liston, K., "BIM handbook: A guide to building information modeling for owners, managers, designers, engineers and contractors." 3rd Edition, John Wiley and Sons, 2018.