



HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Engineering Design					
CODE: CE356		SEMESTER: SPRING			
LANGUAGE: ENGLISH		TYPE: COMPULSORY			
PRE-REQUISITES: - CO-REQUISITES: -		THEORY	PRACTICAL	CREDIT	ECTS
WEEKLY HOURS: 3		1	2	2	3

CONTENT OF THE COURSE:

The major focus of this course is to expose students to design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. This course gives students the opportunity to develop skills and understanding of course concepts through activity, project and problem-based learning.

OBJECTIVE OF THE COURSE:

To enable students to employ engineering and scientific concepts in the solution of design problems. Students will be able to develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges causing difficulties throughout the design process. Students will also learn how to document their work, and communicate their solutions to their peers and members of the professional community.

WEEKLY SCHEDULE

Week	Topics
1	Introduction to BIM (Building information modelling)
2	Building Information Modelling and Beyond 3D Revit Tutorial - Computer Lab
3	BIM Tools and Process Improvement Revit Tutorial - Computer Lab
4	BIM and Lifecycle Management Revit Tutorial - Computer Lab
5	BIM Implementation in Companies Computer Lab: Case study project building design and modelling in Revit
6	BIM for Performance based Design Case study project building design and modelling in Revit
7	Developing design models embedding information as a response to project brief
8	Midterm week
9	Progress on the design project: building design and modelling in Revit
10	Progress on the design project: building design and modelling in Revit
11	Progress on the design project: building design and modelling in Revit
12	Progress on the design project: building design and modelling in Revit
13	Progress on the design project: building design and modelling in Revit
14	Student Design Project Submission and presentation

- **TEXTBOOK:** Arayici, Y. (2015), “Building Information Modelling”, September 2015, Bookboon publisher, ISBN: 978870310986

REFERENCE BOOKS

- Lock, D. (2007) Project Management, 9th edn., Blackwells
- West, M.A. (2004) Effective Teamwork, 2nd edn., Blackwells
- Rose, P., Marshall, L. & Rowland, F. (2006) A Guide to Learning Independently, OU Press
- Arayici, Y., et al (2017), Heritage Building Information Modelling, Taylor & Francis, UK
- Water, M. & Crook, G. (2005) Management and Business Skills in the Built Environment, Spon Press

Eastman, C., Teicholz, P., Sacks, R. & Liston, K. (2008) BIM Handbook: A Guide to Building Information Modelling for Owners, Managers, Designers, Engineers and Contractors, Wiley

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	0	0	3	2	0	2	0	0	0	0	0
LO2	0	0	3	2	0	2	0	0	0	0	0
LO3	0	0	3	2	0	2	0	0	0	0	0
LO4	0	0	3	2	0	2	0	0	0	0	0
LO5	0	0	3	2	0	2	0	0	0	0	0
LO6	0	0	3	2	0	2	0	0	0	0	0
PO: Program Outcomes LO: Learning Outcomes Values: 0: None 1: Low 2: Medium 3: High											

INSTRUCTOR(S):	Prof. Dr. Yusuf Arayici
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:

- LO1: To be able to establish the relationship between project technical details and design concepts.**
LO2: To be able to design light, acoustic and comfort areas based on sustainable design principles.
LO3: Ability to present comfort space needs for building users in the designed model
LO4: Ability to integrate design concepts into field application
LO5: Analyze the needs of building users and offer solutions
LO6: Ability to select more sustainable materials and products for designs that meet the desired criteria

CONTRIBUTION TO PROVIDING VOCATIONAL EDUCATION OF THE COURSE:

The student gains competencies such as the ability to manage projects within the defined working model, the development of research, analysis, report writing and presentation skills, the ability to develop the presentation and communication capability of the project, the development of the project idea and the ability to develop scenarios, and problem solving skills related to various disciplines. In addition, the student gains the skills of critical evaluation of alternative applications to solve the discipline-specific problems mentioned in the project summary, usage and application of Building Information Modeling software, 3D modeling and analysis during the project process.