ECTS COURSE INFORMATION FORM

School/Faculty/Institute	**Faculty of Arts, Design and Architecture**	
Program	**B.Sc. in Architecture**	**Elective**

Course Code	**ARC 439**			
Course Title in English	**High Performance Green Buildings and Leed Certification**			
Course Title in Turkish	**Yüksek Performanslı Yeşil Binalar ve LEED Sertifikasyonu**			
Language of Instruction	**English**			
Type of Course	**Flipped learning**			
Level of Course	**Undergraduate**			
Semester	**Fall**			
Contact Hours per Week	**Lecture: 3**	**Recitation: -**	**Lab: -**	**Studio: -**
Estimated Student Workload	**118 hours per semester.**			
Number of Credits	**5 ECTS**			
Grading Mode	**Standard Letter Grade**			
Pre-requisites	**None**			
Expected Prior Knowledge	**None**			
Co-requisites	**None**			
Registration Restrictions	**Only Undergraduate Students**			
Overall Educational Objective	**Introduction to Sustainability and Enviromental Friendly High Performance Green Designing.**			
Course Description	**Examining the Importance of High Performance Green Buildings. Definition of the Sustainability Disipline. Description of High Performance Green Buildings. Introduction to LEED Certification . Learning Green Design Techniques, Methodology, and Process.**			
Course Description in Turkish	**Yüksek performanslı çevre dostu yeşil binaların insan veçevre açısından öneminin irdelenmesi, yüksek performanslı çevre dostu yeşil binalarıntasarım ve üretim sürecinde göz önüne alınması gereken faktörlerin uluslararası LEED sertifikası ana kriterlerini baz alarak incelenmesi ve tasarım, üretim ve yönetim aşamalarını tartışıp, öğrencilerin sürdürülebilirlik disiplinini tanımalarını ve tasarımlarına uygulamaya yardımcı olmayı amaçlamaktadır.**			
Course Learning Outcomes and Competences	**Upon successful completion of the course, the learner is expected to be able to:** **1. define the discipline of sustainability;** **2. recognize the importance of high-performance green buildings;** **3. acknowledge the LEED Certification, green building design methodologies and techniques.**			

Relation to Program Outcomes and Competences: N=None S=Supportive H=Highly Related

Program Outcomes and Competences	Level N/S/H	Assessed by Reviews, HW, Assignment.
1. Ability to read, write and speak effectively in Turkish and English, equivalent to a B2 European Language Passport Level in English.	S	
2. Ability to question and interpret ideas considering diverse points of view; gather and use data, develop concepts related to people, places and the environment, and make individual decisions.	H	
3. Ability to use appropriate graphical methods including freehand and digital drawing techniques, (ECDL advanced) in order to develop ideas in addition to communicate the process of design.	N	
4. Ability to use fundamental principles of architectural design considering the place, climate, people, society as factors, and simultaneously express present principles in relevant precedents.	S	
5. Understanding of architectural principles belonging to global and local cultures shaped by the climatic, technological, socioeconomic, cultural factors, in addition to principles of historic preservation while developing architectural and urban design projects.	S	
6. Understanding the theories and methods used to describe the relationship between human behavior and physical environment; and concurrently understanding different needs, values, behavioral norms, social and spatial patterns of different cultures.	S	
7. Ability to apply various stages of design processes considering the client and user needs, which include space and equipment requirements besides site conditions and relevant laws and standards.	S	
8. Understanding the role of applied research in determining function, form and systems and their impact on human conditions and behavior.	S	
9. Understanding of the basic principles of static and dynamic structural behavior that withstand gravity and lateral forces, in addition to the evolution and applications of structural systems.	N	
10. Ability to apply the principles of sustainability in architectural and urban design projects that aim to preserve the natural and historic resources and provide healthful environments.	S	
11. Ability to apply the fundamental principles of building and safety systems such as mechanical, electrical, fire prevention, vertical circulation additionally to principles of accessibility into the design of buildings.	S	
12. Understanding the basic principles in the selection of materials, products, components and assemblies, based on their characteristics together with their performance, including their environmental impact and reuse possibilities.	S	
13. Ability to produce a comprehensive architectural project from the schematic design phase to design development phase, while integrating structural systems, life safety and sustainability principles.	S	
14. Understanding the principles of environmental systems such as energy preservation, active and passive heating and cooling systems, air quality, solar orientation, day lighting and artificial illumination, and acoustics; in addition to the use of appropriate performance assessment tools.	H	
15. Ability to choose appropriate materials, products and components in the implementation of design building envelope systems.	H	
16. Ability to understand the principles and concepts of different fields in multidisciplinary design processes and the ability to work in collaboration with others as a member of the design team.	S	
17. Understanding the responsibility of the architect to organize and lead design and construction processes considering the environmental, social and aesthetic issues of the society.	S	
18. Understanding the legal to responsibilities of the architect of the architect effecting the design and construction of a building such as public health and safety; accessibility, preservation, building codes and regulations as well as user rights.	S	
19. Ability to understand the ethical issues involved in the design and construction of buildings and provide services for the benefit of the society. In	S	

addition to the ability to act with social responsibility in global and local scales that contribute to the well being of the society.		
20. Understanding the methods for competing for commissions, selecting consultants and assembling teams, recommending project delivery methods, which involve financial management and business planning, time management, risk management, mediation and arbitration.	**S**	

Prepared by and Date	**İrem Korkmaz 09.03.2020**	
Semester	**Fall 2019-2020**	
Name of Instructor	**Gonca Yılmaz M. Arch LEED AP**	
Course Contents	**Week**	**Topic**
	1.	**Introduction and Meeting**
	2.	**Introduction to the High Performance Green Buildings and Description of Sustainability**
	3.	**The Role and the Importance of the Architect in Green Building Design , Green Building Design and Certification Process and importance of the other Stakeholders**
	4.	**Introduction of LEED Certification and Certification Structure and Process**
	5.	**Sustainable Sites Prerequisite**
	6.	**Sustainable Sites Credits and Example Performances**
	7.	**Water Efficiency Prerequisites, Credits and Example Performances**
	8.	**Materials and Resources Prerequisites, Credits and Example Performances**
	9.	**Indoor Environmental Quality Prerequisites, Credits and Example Performances**
	10.	**Innovation Prerequisites, Credits and Example Performances**
	11.	**Regional Priority**
	12.	**Energy Modeling, Carbon Footprint Dicipline , Life Cycle Assesment**
	13.	**Presentation Reviews (According to other Project classes presentations may reschedule to an earlier week)**
	14.	**Presentation Reviews (According to other Project classes presentations may reschedule to an earlier week)**
	15.	**Evaluation**
	16.	**Evaluation**
Required/Recommended Readings	**Recommended Reading:** **1. References: USGBC LEED Reference Guide, Published by USGBC** **2. Green Build and LEED Core Concepts Guide, Published by USGBC** **3. Cradle to Cradle : Remaking the Way We Make Things , Michael Braungart, William Mcdonough** **4. Green Source Magazine, Green Building Projects and Sustainable Design Case Studies, Published by Mc Graw Hill Construcition** **5. Eko Yapi Dergisi, Cedbik**	
Teaching Methods	**Integrating sustainability across the curriculum prepares students to be both global citizens and champions in addressing some of the biggest challenges we face. The purpose of these resources is to prepare students for today's careers in green building and sustainability industries.**	
Homework and Projects	**1 project, 1 preliminary assignment**	
Laboratory Work	**-**	
Computer Use	**Yes**	
Other Activities	**Field Trips**	
Assessment Methods	**1. Performance in tests: 70 points** **2. Assignment: 30 points**	
Course Administration	**Gonca Yılmaz** **Email: yilmazgo@mef.edu.tr**	

	Student participation will be essential for the course. There will be 4 instant performance tests for the grading. 80% attendance is compulsory for a successful outcome. Academic Dishonesty and Plagiarism: YÖK Disciplinary Regulation."

ECTS Student Workload Estimation

Activity	y/Weeks	Hours			Calculation	Explanation
	eks per Semest er (A)	g for the Activity (B)	the Activity Itself (C)	ng the Activity Require		
Lecture	12	1	3	1	60	A*(B+C+D)
Lab etc.					0	
Midterm(s)					0	A*(B+C+D)
Project, Presentation	2	10	4		28	A*(B+C+D)
Final Assignment	1	15	15		30	A*(B+C+D)
Total Workload					118	
Workload/25					4,72	
ECTS					5	