

ECTS Course Description Form							
PART I (Senate Approval)							
Offering School	Antalya Bilim University-Faculty of Fine Arts and Architecture						
Offering Department	Architecture						
Program(s) Offered to	Architecture					Elective	
Course Code	ARC 4065						
Course Name	Artificial Intelligence in Architecture						
Language of Instruction	English						
Type of Course	Theory						
Level of Course	Undergraduate						
Hours per Week	Lecture:3	Laboratory:	Recitation:	Practical:	Studio:	Other:	
ECTS Credit	3						
Grading Mode	Letter Grade						
Pre-requisites	None						
Co-requisites	None						
Registration Restriction	None						
Educational Objective	The aim of the course is to provide students with information about the areas of use with examples on artificial intelligence, to provide information on basic methods and to enable students to have the ability to use artificial intelligence methods in solving practical problems.						
Course Description	The course will enable students to have preliminary knowledge of what they can create in architecture using artificial intelligence with MATLAB and to apply it in their own projects with an exercise.						
Learning Outcomes	LO1	Students will be able to recognize artificial intelligence concepts and attitudes.					
	LO2	Students will gain skills for problem solving in architecture by examining advanced methods.					
	LO3	Students will be able to propose solutions with the methods they learned in the field of design.					
	LO4	By creating an artificial intelligence model, they can emphasize and develop the subject they apply in their projects.					
	LO5	Students will be able to identify research opportunities in this field.					
PART II (Faculty Board Approval)							
Basic Outcomes (University-wide)		Program Outcomes	LO1	LO2	LO3	LO4	LO5
	PO1	Ability to communicate effectively and write and present a report in Turkish and English.					
	PO2	Ability to work individually, and in intra-disciplinary and multi-disciplinary teams.					
	PO3	Recognition of the need for life-long learning and ability to access information, follow developments in science and technology, and continually reinvent oneself.					
	PO4	Knowledge of project management, risk management, innovation and change management, entrepreneurship, and sustainable development.					
	PO5	Awareness of sectors and ability to prepare a business plan.					
	PO6	Understanding of professional and ethical responsibility and demonstrating ethical behavior.					
Faculty Specific Outcomes	PO7	Gain the ability of conceptualizing, applying, analyzing, synthesizing and evaluating information effectively (Critical Thinking).					
	PO8	Produce innovative ideas and products with creativity (Creativeness).					
	PO9	Gain the ability of leadership, entrepreneurship and self-leadership skills (Leadership and Entrepreneurship).					
	PO10	Care about the ethical values and principles; behave in accordance with these in professional and social life (Ethical Behavior).					
	PO11	Understand, define and reach the information that they need; use information effectively and share it with others (Information Literacy).					
	PO12	Use information effectively and communication technologies while learning, and can share their knowledge and experience with others using technology and visual means (Information and Communication Technology Literacy).					

Discipline Specific Outcomes (program)	PO13	Learns the concepts of architectural design and theories of architecture as well as the intellectual, historical and cultural background to evaluate them from a critical perspective and use them in developing design solutions. One can express one's solutions verbally and in written form. (Knowledge and Ability)					
	PO14	Knows to express each stage of the design process formally by using hand drawings together with the European Computer Driving Licence and other software technologies. (Knowledge and Communication Competence)					
	PO15	Designing space (environment, construction, building) on different scales that are sensitive to the natural and built environment within the framework of basic design and architectural principles. One also knows research methods. (Knowledge and Ability)					
	PO16	Speak at least one foreign language at B1 General Level of European Language Portfolio to express oneself and to follow developments in the field of architecture. (Knowledge and Communication Competence)					
	PO17	Executes an independent project or to take responsibility in multidisciplinary studies, to communicate effectively and share knowledge and competency during the design process. (Competency to work independently and take responsibility)					
	PO18	To knowledge and understanding to analyze building design and systems regarding architectural practice (from prehistoric times to the present). (Knowledge)					
	PO19	Develops a design that respectable to cultural heritage and sustainable by recognizing historical and cultural assets and					
	PO20	The necessary knowledge and ability about contemporary restoration theories and preparation of restoration project by using research, documentation and different measurement methods in the process of documenting the current state of historic buildings and environments. (Knowledge and Ability)					
	PO21	Produces sustainable solutions to current problems by following the developments and technologies in the field of production. (Ability)					
	PO22	Knows to develop designs about environmental and social sustainability principles, the issues related to disasters and accessible designs that meet community needs. (Knowledge and Ability)					
	PO23	Gains the ability to use modern technologies in building and environmental design, to develop and produce innovative solutions; learns necessary information about building materials, techniques and structural behaviors, the laws, regulations and standards and includes them in the design process. (Knowledge and Ability)					
	PO24	To gain the basic knowledge of lighting, acoustics, air conditioning and energy use in the design of environmental systems. (Knowledge)					
	PO25	Knows the historical development of structural systems, types of structural elements such as foundation, wall, flooring, stairs, roof, design, and construction techniques of these elements and applies this information in the projects. (Knowledge and Ability)					
	PO26	Has competence in project management, organization, planning, and leadership for the realization of professional practice and informs individuals and institutions on issues related to a field and shares one's suggestions for solutions to the experts or non-experts in verbally and written form. To produce collaborations and projects with the awareness of social responsibility (Competence to take responsibility and social and Ability)					
PO27	Aware of lifelong learning and identifying the necessary needs for professional development and self-development. (Learning Competence)						
PO28	Has an awareness of professional and ethical behavior; collects data considering social, environmental, and ethical results. One is responsible for the environment, the professional problems and provides professional services like occupational health and safety within the legal frameworks. (Field Specific Competence)						

PART III (Department Board Approval)

Subject	Week	Subject Explanation	LO1	LO2	LO3	LO4	LO5
S1	1	Introduction to the course					
S2	2	Artificial intelligence using areas and examples					
S3	3	AI programs on web - Design					

Course Subjects, Contribution of Course Subjects to Learning Outcomes, and Methods for Assessing Learning of Course Subjects	S4	4	AI programs on web - Planning					
	S5	5	AI programs on web – focus on bioclimatic designs					
	S6	6	AI programs on web – 3D model + Render					
	S7	7	AI programs on web – 3D model + Render					
	S8	8	Midterm					
	S9	9	Introducing the MATLAB program and giving details					
	S10	10	Sample of artificial neural network, deep learning, fuzzy logic, Rules					
	S11	11	Project Analysis Classwork					
	S12	12	Project Analysis Classwork					
	S13	13	Project Analysis Classwork					
	S14	14	Project Analysis Classwork					
Assessment Methods, Weight in Course Grade, Implementation and Make- Up Rules	No	Type		Weight	Implementation Rule		Make-Up Rule	
	A1	Midterm Project		20%	Students will be evaluated with a midterm project in mid-semester			
	A2	Presentations		20%	Students will prepare presentations			
	A3	Final Project		50%	The total content of the course will be evaluated with a final project			
	A4	Classworks		10%	upload LMS system			
	A5							
TOTAL							100%	
Evidence of Achievement of Learning Outcomes	Students will demonstrate learning outcomes through weekly presentation, in-class assignments, Midterm exams and Final exam.							
Method for Determining Letter Grade	Upon successful completion of all assessment methods, the total scores will be averaged and converted into a final letter grade using the following percentages and grading criteria.							
	ASSESSMENT METHOD	EFFECT ON GRADING			GRADE	MARKS	GRADE	MARKS
	Presentations	20%			A+	-	C+	60-64
	Classwork	10%			A	95-100	C	55-59
	Midterm project	20%			A-	85-94	C-	50-54
	Final project	50%			B+	80-84	D+	45-49
					B	75-79	D	40-44
				B-	65-74	F	0-39	
Teaching Method, Student Work Load	No	Method		Explanation			Hours	
	Time expected to be allocated by instructor							
	1	Lecture					3x13=39 h	
	Time expected to be allocated by student							
	2	Presentations					2x3=6 h.	
	3	Classworks					4x3=12 h.	
	3	Midterm Project					1x8= 8 h.	
	4	Final Project					1x10= 10 h.	
TOTAL				75 hours				
IV. PART								
Instructor	Name							
	E-mail							
	Phone Number							
	Office Number							
	Office Hours		4 hours (according to school semestre)					
Course Materials	Mandatory							
	Recommended		1.Interior Gardens – Designing and constructing green spaces in private and public buildings by Haike Falkenberg 2.Interior Plantscaping: Principles and Practieces by James M. DelPrince 3.The Manual of Interior Plantscaping: A Guide to Design, Installation, and Maintenance by Kathy Fediw 4.Indoor Gardening for Beginners by Timothy S. Morris 5.Urban Jungle: Living and Styling with Plants by Igor Josifovic and Judith de Graff					
Other	Scholastic Honesty		Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Any for of scholastic dishonesty is a serious academic violation and will result in a disciplinary action.					
	Students with Disabilities		Reasonable accommodations will be made for students with verifiable disabilities.					
	Safety Issues							

Flexibility

Circumstances may arise during the course that prevents the instructor from fulfilling each and every component of this syllabus; therefore, the syllabus is subject to change. Students will be notified prior to any changes.

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