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					Core
Course Code	ARC 3404					
Course Name	Physical Environmental Control					
Language of Instruction	English					
Type of Course	Theory					
Level of Course	Undergraduate					
Hours per Week	Lecture: 3	Laboratory:	Recitation:	Practical: 2	Studio:	Other:
ECTS Credit	6					
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 a background on physical environmental parameters and to teach passive and active design principles.					
Course Description	Passive Air Conditioning-Climatic elements, climatic comfort, design parameters related to the built environment that affect climate and energy control (site, orientation, building envelope, building form, building distance, etc.), building envelope design. Lighting- Definition of light, types of lighting; photometry, laws (regulations); visual comfort, design parameters related to the built environment that affect light control (windows, room dimensions, reflections of interior surfaces, obstacles, artificial light sources, etc.), artificial lighting systems. Noise control - Definition of sound, relationship between human health and noise, design of the built environment as a noise control system; noise and vibration control in buildings; sound insulation of building elements; Acoustic design of halls. An understanding of the basic principles that inform the design of building service systems, including plumbing, heating system, vertical transportation, security and fire protection systems. At the end of the course, the student; water supply system to the building and its elements, sanitary devices, design of wet areas, waste water, evacuation system and its elements, sanitary application, heating systems and elements, integration of these systems and elements with architecture, ventilation systems and elements, air conditioning systems and elements, fire control systems, sprinkler installation, active fire safety systems, fire escape					
Learning Outcomes	**LO1**	The ability to correctly apply the basic principles of building envelope materials and systems design by having knowledge of basic air conditioning principles and energy use in environmental systems design.				
	LO2	To gain the ability to use the basic principles of lighting issues in environmental systems design and to gain natural and artificial lighting design skills.				
	LO3	Gaining HVAC system design skills by gaining knowledge about active system design and gaining the ability to design for Fire in Buildings				
	LO4	Gaining design skills of wet areas				
	LO5	To be able to use the basic principles of acoustics in environmental systems design and to have knowledge about the basic principles of space acoustics and to be able to use this knowledge in practice.				

PART II (Faculty Board Approval)

		Program Outcomes	LO1	LO2	LO3	LO4	LO5
Basic Outcomes (University-wide)	**PO1**	**Ability** to communicate effectively and write and present a report in Turkish and English.	X	X	X	X	X
	PO2	**Ability** to work individually, and in intra-disciplinary and multi-disciplinary teams.	X	X	X	X	X
	PO3	**Recognition** of the need for life-long learning and **ability** to access information , follow developments in science and technology, and continually reinvent oneself.	X	X	X	X	X
	PO4	**Knowledge** of project management, risk management, innovation and change management, entrepreneurship, and sustainable development.	X	X	X	X	X
	PO5	**Awareness** of sectors and **ability** to prepare a business plan.	X	X	X	X	X
	PO6	**Understanding** of professional and ethical responsibility and **demonstrating** ethical behavior.	X	X	X	X	
Faculty Specific Outcomes	**PO7**	The graduated students have the ability of conceptualizing, applying, analyzing, synthesizing and evaluating information effectively (Critical Thinking).			X	X	
	PO8	The graduated students produce innovative ideas and products with creativity (Creativeness).		X	X	X	X
	PO9	The graduated students have the ability of leadership, entrepreneurship and self-leadership skills (Leadership and Entrepreneurship).					
	PO10	The graduated students care about the ethical values and principles; behave in accordance with these in professional and social life (Ethical Behavior).					
	PO11	The graduated students; understand, define and reach the information that they need; use information effectively and share it with others (Information Literacy).					
	PO12	The graduated students can effectively use information and communication technologies while learning, and can share their knowledge and experience with others using technology and visual means (Information and Communication Technology Literacy).					
	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)					

Discipline Specific Outcomes (program)	**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)	X	X			X
	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 understanding the importance of these values. (Knowledge and Ability)					
	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)	X	X	X	X	X
	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)	X	X	X	X	X
	PO24	To gain the basic knowledge of lighting, acoustics, air conditioning and energy use in the design of environmental systems. (Knowledge)	X	X	X	X	X
	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**
Course Subjects, Contribution of Course Subjects to Learning Outcomes, and Methods for Assessing Learning of	**S1**	1	Introduction of course content.	X	X	X	X	X
	S2	2	Passive air conditioning and passive design principles in buildings	X				
	S3	3	Heating systems and heating load, HVAC System Components, passive and active fire control systems			X		
	S4	4	Natural and artificial lighting design		X			
	S5	5	Designing water supply to the building, water supply and water tank, plumbing systems, Plumbing, wet areas and waste water removal systems				X	
	S6	6	Environmental noise control and architectural acoustics					X
	S7	7	Studio Work-Control of distances between buildings, calculation of shadow cones, site plan, building envelope design based on thermal comfort, U value calculation, design of building envelope layers	X				

Course Subjects	**S8**	8	Midterm Exam					
	S9	9	Studio work: Selection of the HVAC system for the building, calculation of the heating load, planning of the fire control systems			X		
	S10	10	Religious Holiday					
	S11	11	Studio Work-Lighting space design in the building envelope, transparency ratio, solar control, electrical project preparation		X			
	S12	12	Studio work: Water supply to the building, design of the cold and hot water system in the plan, sewage discharge from the building, Preparation of architectural drawings for a typical wet area (plan and section 1/20)				X	
	S13	13	Studio Work-Calculation of environmental noise, sound insulation in the building envelope, acoustic design of indoor halls, reflection controls, material decisions					X
	S14	14	National Holiday					

	No	**Type**	**Weight**	**Implementation Rule**	**Make-Up Rule**
Assessment Methods, Weight in Course Grade, Implementation and Make-Up Rules	**A1**	**Exam**	20%	There will be one midterm exam. Midterm exam date will be determined during the semester.	A make-up exam will be provided if the student provides an acceptable legitimate document, according to the school regulation
	A2	**Quiz**		-	-
	A3	**Homework**		-	-
	A4	**Project**	40%	The project will end with a presentation.	
	A5	**Report**		-	
	A6	**Presentation**		-	
	A7	**Attendence/Interaction**			
	A8	**Class/Lab./Field Work**			
	A9	**Final Exam**	40%	There will be one finalexam.	A make-up exam will be
	TOTAL		**100%**		

Evidence of Achievement of Learning Outcomes	Students will demonstrate learning outcomes through class activities, debates and project assignments. These activities reflect a transdisciplinary approach, asking the student to make connections between different topics. Generally every topic is tested with at least one exam question.

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.

Method for Determining Letter Grade

ASSESSMENT METHOD	**EFFECT ON GRADING**	**GRADE**	**MARKS**	**VALUE**	**GRADE**	**MARKS**	**VALUE**
Studio Work	40%	A+	100	4,00	C+	60-64	2,40
Midterm Exam	20%	A	95-100	4,00	C	55-59	2,20
Final Exam	40%	A-	85-94	3,70	C-	50-54	2,00
		B+	80-84	3,30	D+	45-49	1,70
		B	75-79	3,00	D	40-44	1,50
		B-	65-74	2,70	F	0-39	0,00

Öğretim Metodları, Tahmini Öğrenci Yükü

No	**Method**	**Explanation**	**Hours**
Time applied by Instructor			
1	**Lecture**	**Lecturing and utilizing whiteboard and slides. Sample questions and answers to strengthen learning. In class exams.**	3 hours (13 weeks)=39 hrs
Time expected to be allocated by student			
2	**Project Development**	**Studio work**	6 hours (13 weeks)=78 hrs
9	**Midterm Exam Preparation**		14 hours (1 week)= 14 hrs
10	**Midterm Exam**		2 hours (1 week)= 2 hrs
11	**Final Exam Preparation**		15 hours (1 week)= 15 hrs
12	**FinalExam**		2 hours (1 week)= 2 hrs
TOTAL			**150 hours**

IV. PART

Instructor	**Name**	
	E-mail	
	Phone Number	
	Office Number	

	Office Hours	4 hours (according to school semestre)
Course Materials	**Mandatory**	
	Recommended	
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.