

Akashi College		Year	2024	Course Title	Environmental Engineering in Architecture II
Course Information					
Course Code	6430		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Architecture		Student Grade	4th	
Term	First Semester		Classes per Week	2	
Textbook and/or Teaching Materials	建築環境工学 (初学者の建築講座) 倉渕 隆著				
Instructor	HIRAISHI Toshihiro				
Course Objectives					
(1) To acquire basic knowledge of architecture environmental engineering, and to give concrete examples. (2) To make a presentation about architecture environmental engineering. (3) To listen and question other students presentation.					
Rubric					
	Ideal Level		Standard Level		Unacceptable Level
Achievement 1	The student can entirely understand architecture environmental engineering. The student can give specific examples.		The student can understand architecture environmental engineering. The student can give specific examples.		The student can not architecture environmental engineering. The student can not give specific examples.
Achievement 2	The student can make an excellent presentation about architecture environmental engineering.		The student can make a good presentation about architecture environmental engineering.		The student can not make a presentation about architecture environmental engineering.
Achievement 3	The student can listen with attention and pose good questions to other students presentation.		The student can listen and pose questions to other students presentation.		The student can not listen or pose questions to other students presentation.
Assigned Department Objectives					
Teaching Method					
Outline	To acquire knowledge on both comfort and energy saving, understand the architectural method, and perform steady-state forecast calculations.In this course, students will acquire the knowledge necessary to achieve both energy conservation and comfort. The students will investigate and present on the theme chosen, and deepen their understanding by asking questions about other students presentations. The contents of the lectures deals with social problems related to architecture environmental engineering and include themes of global environmental conservation, the use of new energy, etc.				
Style	Weeks 1-7 Lectures: Basic knowledge about the light environment and sound environment. Weeks 8-14: Each student chooses a topic of interest among the content learned at the previews week and makes a 5-minute presentation. Adjust in the eighth week so that the topics do not overlap.				
Notice	To be resourceful on the way to present the topic studied, listen and make questions. The students will mutually deepen the knowledge acquired. This course requires 90 hours of self-study time to do preliminary reviews, reviews, and assignments. Students attendance is required, and only a maximum of 5 absences is excused.				
Characteristics of Class / Division in Learning					
☐ Active Learning		☐ Aided by ICT		☒ Applicable to Remote Class	☐ Instructor Professionally Experienced
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Construction site and position of the sun, sunlight hours and sunlight time diagrams, and how to adjust the sunlight and solar radiation.	To understand the relationship between the construction site and position of the sun, sunlight hours and sunlight time diagrams, and how to adjust the sunlight and solar radiation.	
		2nd	Difference use of sunlight and solar radiation, the difference in the effects of ultraviolet light, infrared light and visible light.	To understand the use of sunlight and solar radiation, the difference in the effects of ultraviolet light, infrared light and visible light.	
		3rd	The relationship between vision and light, vision, glare phenomena, color system, color planning	To understand the relationship between vision and light, vision, glare phenomena, color system, color planning.	
		4th	Daylighting and daylighting plan, artificial lighting, lighting plan, and illumination	To determine uniformity illumination of a room by measuring the illuminance in the room with a luminometer.	
		5th	Sound units, the structure of hearing, three significant characteristics of psychoacoustics, amplitude and annoyance, propagation attenuation, diffraction of sound	To understand sound units, the structure of hearing, three significant characteristics of psychoacoustics, amplitude and annoyance, propagation attenuation, diffraction of sound.	
		6th	Sound absorption and sound insulation, reverberation, the structure of sound insulation material, acoustic planning	To understand sound absorption and sound insulation, reverberation, the structure of sound insulation material, acoustic planning	
		7th	Calculate reverberation time Choice and division of the topic to be studied and presented.	To calculate the reverberation time	

		8th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
	2nd Quarter	9th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
		10th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
		11th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
		12th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
		13th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
		14th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
		15th	Students presentation about building equipment Presentation 5 min, Q&A 3 min, questions that were not answered should be answered on the next week.	To choose a topic from the content learned from weeks 1 to 7, and make a presentation. Presentation 5 min, Q&A 3 min.
		16th	End-term Exam	

Evaluation Method and Weight (%)

	Examination	Presentation	Participation (questions)	Total
Subtotal	70	30	0	100
Basic Proficiency	70	30	0	100
Specialized Proficiency	0	0	0	0
Cross Area Proficiency	0	0	0	0