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| Akashi College | | Year | 2022 | Course Title | Environmental Engineering in Architecture II |
| Course Information | | | | | |
| Course Code | 4425 | | 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 | TOBITA Kunihiro | | | | |
| 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 | | | | | |
| <input type="checkbox"/> Active Learning | | <input type="checkbox"/> Aided by ICT | | <input checked="" type="checkbox"/> Applicable to Remote Class | <input type="checkbox"/> 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 | |

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| | 2nd Quarter | 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. |
| | | 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 |