Oyama College	Year	2022	Course Title	Building Mechanics

Course Information

Course Code	0087	Course Category	Specialized / Elective
Class Format	Lecture	Credits	Academic Credit: 2
Department	Department of Architecture	Student Grade	5th
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials			
Instructor	OHWA Seira		

Course Objectives

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1			
Achievement 2			
Achievement 3			

Assigned Department Objectives

学習・教育到達度目標 ④
JABEE (A)

Teaching Method

Outline	
Style	
Notice	

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	Summarizing slope deflection methods	Realizing already learned slope deflection methods
		2nd	Summarizing moment distribution methods	Realizing already learned moment distribution methods
		3rd	Simultaneous linear equations and stiffness matrix of truss	Realizing sweep out methods, displacement, force vector and stiffness matrix
		4th	Stiffness matrix of beams	Realizing bending stiffness of beams, stiffness matrix of beam parts
		5th	Stiffness matrix of frameworks in plans	Realizing coordinate conversion, total stiffness matrix and member stress
		6th	Elastic-plastic properties in members	Realizing complete elastic-plastic properties, plastic section modules, strength in members
		7th	Ultimate lateral strength	Realizing collapsed mechanism, plastic analysis methods and strength frames.
		8th	Midterm test	Realizing the 1st - 7th classes
	2nd Quarter	9th	Free vibration in 1-quality system and damped vibration	Realizing the equation of vibration, attenuation constant, viscous damping vibration and logarithmic damping rate
		10th	Energy response in free vibration	Realizing the response in equilibrium equation of energy, the energy response undamped free vibration, energy response in damped free vibration
		11th	Response in 1-quality system in seismic motion	Realizing vibration equation, 'resonance and resonance curve' and the energy response in seismic motion
		12th	Free vibration in multi-quality point system for shear type	Realizing mass matrix, eigenvalue and eigenvector
		13th	Seismic response in multi-quality point system for shear type	Realizing ground motion acceleration, stimulation coefficient, mode synthesis and Seismic response
		14th	Seismic response analysis in elastic-plastic properties (part Ⅰ)	Realizing the 1st example seismic response analysis in elastic-plastic properties and response spectrum (part Ⅰ)
		15th	Seismic response analysis in elastic-plastic properties (part Ⅱ)	Realizing the 2st example seismic response analysis in elastic-plastic properties and response spectrum (part Ⅱ)
		16th	Regular exams	Realizing the 1st - the 15th classes

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	0	0	0	0	0	0

Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0