Akashi College			Year 2023		C	ourse Title	Hydraulic Engineering I					
Course Information												
Course Code 5029				Course Categor	Ŋ	Specializ	ed / Elective					
Class Format Lecture		Lecture			Credits		Academi	c Credit: 2				
Department Architectu		re and Civil Engineering		Student Grade	e Adv. 2nd							
Term	erm First Semester				Classes per Week 2							
Textbook Teaching	and/or Materials											
Instructor WATANABE Moriyoshi												
Course Objectives												
<ol> <li>Acquire the ability to perform runoff analysis using hydrological data.</li> <li>Acquire the ability to consider and explain the mechanism of flood disaster and its countermeasures from multiple perspectives.</li> <li>Acquire the ability to explain the necessity of water resource development, environmental impact and countermeasures.</li> </ol>												
Rubric												
			Ideal Level		Standard Level		· ·					
Achievement 1			using hydrological data.		using hydrologi	ising hydrological data.		using hydrological data.				
Achievement 2			Can explain the mechanism of flood disaster and its countermeasures from multiple perspectives.		Can explain the flood disaster a countermeasur	he mechanism of and its ures.		Cannot explain the mechanism of flood disaster and its countermeasures from multiple perspectives.				
Achievement 3			Can explain the necessity of water resource development, environmental impact and countermeasures.		Can explain the water resource	e necessity of e development.		Cannot explain the necessity of water resource development, environmental impact and countermeasures.				
Assigne	d Depar	tment Obj	ectives									
Teachin	g Metho	d										
Outline		Students v basin.	vill learn about t	he protection and	l development in	the e	specially f	looding and inundation in river				
Style		Classes an	e based on lectu	res, and group w	ork, experiments	s, and	exercises	are also conducted.				
Notice In list course s content will amount to 90 hours of study in total. These nours include the learning guaranteed in classes and the standard self-study time required for pre-study / review, and com assignment reports. The course is open to students from any department. Classes will be taught possible, but students should prepare textbooks. Basic knowledge of hydraulics, sanitary engined environmental engineering will be explained in the lecture as much as possible. Students who miss 1/3 or more of classes will not be eligible for evaluation.												
Charact	eristics o	of Class / E	Division in Lea	arning								
Active	Learning		Aided by ICT     Applicable to		o Remote Class Experienced							
Course	Plan											
		TI	neme	Goals								
	1st Quarter	1st H	ydraulic System	Guidance		Can explain various problems occurring at aquatic area.						
1st Semeste r		2nd Ri	ver flood contro	bl		Can explain outline of flood disaster and flood control in river.						
		3rd W	ater cycle and h	cycle and hydrological data		Can explain the water cycle in the basin and calculate the occurrence probability from hydrological data						
		4th R	un off analysis		Can explain runoff analysis in the basin.							
		5th Ex	periment of flooding		Can explain the mechanism of external and inland flooding.							
		6th Ex	periment of flood and inundation		Can explain the mechanism of external and inland flooding.							
		7th D	rainage system in urban		Can explain outline of water cycle in the urban, and countermeasure to inundation.							
		8th Ba	asin flood control		Can explain outline of river basin flood control, and countermeasure to the flooding.							
	2nd Quarter	9th G	roup work about flood and inundation 1		Can collect materials and information related to issues and propose ideas to achieve objectives.							
		10th G	roup work about flood and inundation 2		Can crate shape to ideas to achieve the purpose of the assignment.							
		11th G	oup work about	work about flood and inundation 3		Can crate shape to ideas to achieve the purpose of the assignment.						
		12th G	oup work about	out flood and inundation 4		Can crate shape to ideas to achieve the purpose of the assignment.						
		13th G	roup work about	It flood and inundation 5		Can make presentations using ideas proposed in groups and understand and consider flood disaster.						
		14th W	ater cycle and v	water resources		Can explain water cycle in the river basins, watar resources in Japan, and water resource development.						

			Environmental impact development	of water resource	Can explain the functions and roles of dams, their impact on the environment, and countermeasures.						
		16th	Periodic exam								
Evaluation Method and Weight (%)											
		E	kamination	Groupwork	Periodic exam	Total					
Subtotal			)	50	20	100					
Basic Proficiency				0	0	0					
Specialized Proficiency			)	50	20	100					
Cross Area Proficiency				0	0	0					