

Anan College		Year	2024	Course Title	Composite Materials
Course Information					
Course Code	5297C04		Course Category	Specialized / Elective	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Course of Mechanical Engineering		Student Grade	Adv. 2nd	
Term	First Semester		Classes per Week	前期:2	
Textbook and/or Teaching Materials	FRP Basics (KORONA PUBLISHING CO., LTD)				
Instructor	Kadono Takuma				
Course Objectives					
1. Able to understand the knowledge and technology related to various composite materials and explain their basics. 2. Able to understand the definition, uses, materials, molding methods, characteristics, and design methods of FRP (fiber reinforced plastics), and explain their basics. 3. Able to understand the knowledge and technology related to high-performance and multi-functional concrete using various reinforcing materials and admixtures, and explain the basics.					
Rubric					
	Ideal Level		Standard Level		Minimum Level
Achievement 1	Able to understand the knowledge and technology of various composite materials, and explain the basics, pose problems, and make suggestions regarding them.		Able to understand the knowledge and technology of various composite materials and explain the basics about them.		Able to explain the basics of knowledge and technology for various composite materials.
Achievement 2	Able to understand definitions, uses, materials, molding methods, characteristics and design methods related to FRP, and explain the basics, pose problems, and make suggestions regarding them.		Able to understand the definitions, uses, materials, molding methods, characteristics and design methods of FRP, and explain their basics.		Able to explain the basics of FRP definitions, applications, materials, molding methods, properties and design methods.
Achievement 3	Able to understand the knowledge and technology of concrete that can be made high performance and multifunctional with various reinforcing materials and admixtures, and explain the basics, raise problems, and make proposals regarding them.		Able to understand the knowledge and technology of concrete that can be made high performance and multi-functional with various reinforcing materials and admixtures, and explain the basic matters related to them.		Able to explain the basics of knowledge and technology related to concrete, which can be enhanced and multifunctional with various reinforcing materials and admixtures.
Assigned Department Objectives					
D-1					
Teaching Method					
Outline	The students of this course will can learn various composite materials used as structural materials and functional materials, FRP that is a composite material with a wide range of applications, and concrete that uses various materials to improve performance and increase functionality. The students of this course will will be able to acquire knowledge and skills regarding the materials used, molding methods, properties, design methods, and applications, and improve your technical skills in design, construction, and maintenance that are suitable for society and the environment.				
Style	【31 class hours + final exam + 60 self-study hours】 Since this course is a credit course, it is necessary to submit assignments for pre- and post-learning.				
Notice	This subject is included in Group V of Specialized Fields, which is a requirement for completing the JABBE-accredited Creative Technology System Engineering program. This class is a lecture that uses textbooks, handouts, videos, etc., so please do not miss class. Concrete, the most widely used industrial material in the world, is a classic and cutting-edge composite material. Before participating in these concrete classes, please use the textbooks on construction materials and concrete structures in the construction course and understand the basics in advance.				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	
				<input type="checkbox"/> Instructor Professionally Experienced	
Course Plan					
			Theme	Goals	
1st Semester	1st Quarter	1st	Guidance / Various composite materials	Able to understand the objectives, significance, plans, precautions, etc. of the class, and explain them. / Able to describe types of composite materials, materials used, molding methods, properties, design methods, applications, etc.	
		2nd	Various composite materials	Able to describe types of composite materials, materials used, molding methods, properties, design methods, applications, etc.	
		3rd	Various composite materials	Able to describe types of composite materials, materials used, molding methods, properties, design methods, applications, etc.	
		4th	Various composite materials	Able to describe types of composite materials, materials used, molding methods, properties, design methods, applications, etc.	

		5th	Various composite materials	Able to describe types of composite materials, materials used, molding methods, properties, design methods, applications, etc.
		6th	FRP	Able to explain the definition of FRP, use, material, molding method, characteristics, design method, etc.
		7th	FRP	Able to explain the definition of FRP, use, material, molding method, characteristics, design method, etc.
		8th	FRP	Able to explain the definition of FRP, use, material, molding method, characteristics, design method, etc.
	2nd Quarter	9th	Midterm exam	
		10th	Return of exam papers / FRP	Able to explain the definition of FRP, use, material, molding method, characteristics, design method, etc.
		11th	FRP	Able to explain the definition of FRP, use, material, molding method, characteristics, design method, etc.
		12th	FRP	Able to explain the definition of FRP, use, material, molding method, characteristics, design method, etc.
		13th	High Performance Concrete / Multifunctional Concrete	Able to explain the types, characteristics, and uses of various reinforcing materials and admixtures for concrete, and explain the characteristics and applications of high-performance concrete and multifunctional concrete using these.
		14th	High Performance Concrete / Multifunctional Concrete	Able to explain the types, characteristics, and uses of various reinforcing materials and admixtures for concrete, and explain the characteristics and applications of high-performance concrete and multifunctional concrete using these.
		15th	High Performance Concrete / Multifunctional Concrete	Able to explain the types, characteristics, and uses of various reinforcing materials and admixtures for concrete, and explain the characteristics and applications of high-performance concrete and multifunctional concrete using these.
		16th	(Final exam) Return of exam papers	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	60	0	0	0	40	0	100
Basic Proficiency	10	0	0	0	10	0	20
Specialized Proficiency	30	0	0	0	20	0	50
Cross Area Proficiency	20	0	0	0	10	0	30