

Akashi College		Year	2023		Course Title	Circuit Theory B	
Course Information							
Course Code		5326		Course Category		Specialized / Compulsory	
Class Format		Lecture		Credits		School Credit: 1	
Department		Electrical and Computer Engineering		Student Grade		3rd	
Term		Second Semester		Classes per Week		2	
Textbook and/or Teaching Materials							
Instructor		SUYAMA Taikei					
Course Objectives							
1) Can calculate the parameters for a four-terminal network. 2) Understand the Bartlett's bisection theorem and bridge T circuits and can find them. 3) Understand the definition of filters and various constant K filters and can find them.							
Rubric							
		Ideal Level		Standard Level		Unacceptable Level	
Achievement 1		Can calculate the parameters for a four-terminal network.		Can use the parameters for a four-terminal network.		Cannot use the parameters for a four-terminal network.	
Achievement 2		Understand the Bartlett's bisection theorem and bridge T circuits and can design them.		Understand the Bartlett's bisection theorem and bridge T circuits and can use them.		Do not understand the Bartlett's bisection theorem and bridge T circuits.	
Achievement 3		Understand the definition of filters and various constant K filters and can design them.		Understand the definition of filters and various constant K filters and can use them.		Do not understand the definition of filters and various constant K filters.	
Assigned Department Objectives							
Teaching Method							
Outline		Following Electric Circuits II in the second year, the aim of this course is to make sure students thoroughly master the basics of electrical circuits through lectures and problem exercises. The course is also intended to make sure students learn the basic ways of thinking as an electrical and electronics technician. The first semester will be taught by Hosokawa, and second semester by Suyama.					
Style		The class will be carried out by the instructor writing notes on the blackboard and explaining the content. In the first semester, students will do exercises every two or three classes, and in the week when they do not, they will be given a report assignment to improve their understanding. In the second semester, there will be two problem exercises on the class content of the first half of the semester and the second half to deepen their understanding of the content of the lessons.					
Notice		Students should review after the weekly lessons, and ask questions during the next class. Also, they should solve a lot of exercise problems. Students who miss 1/3 or more of classes will not be eligible for evaluation.					
Characteristics of Class / Division in Learning							
☐ Active Learning		☐ Aided by ICT		☒ Applicable to Remote Class		☐ Instructor Professionally Experienced	
Course Plan							
			Theme		Goals		
2nd Semester	3rd Quarter	1st	Introduction of a four-terminal network, impedance parameters, and admittance parameters		Understand the definition of a four-terminal network, and find the impedance parameters and admittance parameters.		
		2nd	Four-terminal constants		Can find a four-terminal constant.		
		3rd	H parameters and G parameters		Can find the H parameters and G parameters.		
		4th	Shadow parameters		Can find the shadow parameters.		
		5th	Various connections of a four-terminal network		Can find various connections of a four-terminal network.		
		6th	Basic four-terminal circuits and bridge T circuits		Understand basic four-terminal circuits and bridge T circuits and can find them.		
		7th	Problem exercise		Understand the content of weeks 1 to 6, and can find the four-terminal network parameters		
		8th	Bartlett's bisection theorem		Understand the Bartlett's bisection theorem and can find it.		
	4th Quarter	9th	Reactance four-terminal networks		Understand the reactance four-terminal networks.		
		10th	Definition of filters and constant K filters		Understand the definition of filters and constant k filters and can design them.		
		11th	Constant K low pass filters		Understand and can design constant K low pass filters.		
		12th	Constant K high pass filters		Understand and can design constant K high pass filters.		
		13th	Constant K band pass filters		Understand and can design constant K band pass filters.		
		14th	Problem exercise		Understand the content of weeks 9 to 14, and can analyze/design the Bartlett's bisection theorem, reactance four-terminal networks, and filters.		
		15th	Total review		Total review		
		16th	Final exam		Final exam		

Evaluation Method and Weight (%)		
	Examination (prophase) 100%	Total
Subtotal	100	100
Basic Proficiency	20	20
Specialized Proficiency	80	80
Cross Area Proficiency	0	0