

Tsuyama College		Year	2020		Course Title	Communication Engineering
Course Information						
Course Code	0147			Course Category	Specialized / Elective	
Class Format	Lecture			Credits	Academic Credit: 2	
Department	Department of Integrated Science and Technology Communication and Informations System Program			Student Grade	5th	
Term	Year-round			Classes per Week	1	
Textbook and/or Teaching Materials	Required points will be distributed.					
Instructor	SHIMADA Takao					
Course Objectives						
Learning purposes: To understand the basic communication technologies used in communication systems such as telephones.						
Course Objective: 1.To understand the principle of the modulation method. 2.To understand the principle of the multiplexing method. 3.To understand the principle of the coaxial cable and optical fiber.						
Rubric						
	Excellent		Good		Acceptable	Not acceptable
Achievement 1	Understand the principle of the modulation method and be able to explain it accurately.		Understand and explain the principles of modulation methods.		An outline of the principle of the modulation method can be explained.	Not reach the left
Achievement 2	Understand the principle of the multiplexing method and be able to explain it accurately.		Understand and explain the principles of multiplexing methods.		An outline of the principle of the multiplexing method can be explained.	Not reach the left
Achievement 3	Understand the basic principles of coaxial cables and optical fibers, and be able to explain them accurately.		Understand the basic principles of coaxial cables and optical fibers, and be able to explain.		Be able to outline the basic principles of coaxial cables and optical fibers.	Not reach the left
Assigned Department Objectives						
Teaching Method						
Outline	Gneral or Specialized : Specialized Field of learning : Electrical and Electronic Engineering Required, Elective, etc. : Elective subjects Foundational academic disciplines : Engineering / Electrical and Electronic Engineering / Communication Engineering Relationship with Educational Objectives : This class is equivalent to "(3) Acquire deep foundation knowledge of the major subject area". Course outline : Learn the basics about modulation, a communication technology that is used around us in devices such as telephones.					
Style	Course method : Mainly, board-writing is used. Sometimes, practices regarding the foundation will be held. Grade evaluation method : Exams (80%) + Reports (20%). Examinations will be conducted 2 times, and the evaluation ratios will be the same. As a general rule, we do not allow re-examination.					
Notice	Precautions on the enrollment : Students must take this class (no more than one-fifth of the required number of class hours missed) and earn the credit in order to complete the 5th year course. This is a "class that requires study outside of class hours". Classes are offered for 15 hours per credit, but 30 credit hours are required in addition to this. Follow the instructions of your instructor for these studies. Foundational subjects : Electric Circuits I (3rd year), Electronic Circuits I (3rd), Electric Circuits II (4th), Electronic Circuits II (4th) Related subjects : Electric and Electronic System Engineering Experiments(4th year) Attendance advice : If you do not understand the content of the class, ask the teacher.					
Course Plan						
			Theme		Goals	
2nd Semester r	3rd Quarter	1st	Guidance, Overview of communication system		Overview of communication system	
		2nd	Analog modulation 1		Amplitude modulation	
		3rd	Analog modulation 2		Frequency modulation, Phase modulation	
		4th	Digital modulation 1		Amplitude shift keying, Frequency shift keying	
		5th	Digital modulation 2		Phase shift keying	
		6th	Pulse code modulation 1		Principle of pulse code modulation 1	
		7th	Pulse code modulation 2		Principle of pulse code modulation 2, Quantization noise	
		8th	2nd semester mid-term exam			

	4th Quarter	9th	Return and commentary of exam answers	
		10th	Multiplexing 1	Frequency division multiplexing, Time division multiplexing
		11th	Multiplexing 2	Code division multiplexing
		12th	Coaxial cable	Propagation principle, Characteristic impedance
		13th	Optical fiber 1	Propagation principle
		14th	Optical fiber 2	Maximum light receiving angle
		15th	2nd semester final exam	
		16th	Return and commentary of exam answers	

Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Report	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	80	0	0	0	20	0	100
Cross Area Proficiency	0	0	0	0	0	0	0