Tsuyama College	Year	2020		Course Title	Digital Signal Processing

Course Information

Course Code	0138		Course Category	Specialized / Elective
Class Format	Lecture		Credits	Academic Credit: 2
Department	Department of Integrated Science and Technology Electrical and Electronic Systems Program		Student Grade	5th
Term	Year-round		Classes per Week	1
Textbook and/or Teaching Materials	Textbooks:Masafumi Hagiwara,"Digital Signal processing"(Morikita Publishing Co,,LTD)			
Instructor	YABUKI Noboru			

Course Objectives

Learning purposes :
Learn the basic theory of digital signal processing.In addition, learn basic techniques related to digital image processing, which are often used for digital signal processing.

Course Objectives :
1. To understand the theory of digital signal processing.
2. To understand the basic technology related to digital image processing.

Rubric

	Excellent	Good	Acceptable	Not acceptable
Achievement 1	The student can use the theory of digital signal processing.	The student can fully explain the basic theory of digital signal processing.	The student understands the basic theory of digital signal processing. (test)	The student can't explain the basic theory of digital signal processing.
Achievement 2	The student can apply technology related to digital image processing.	The student can fully explain the basic technology related to digital image processing.	The student Understands the basic technology related to digital image processing (test).	The student can't explain the basic technology related to digital image processing.

Assigned Department Objectives

Teaching Method

Outline	General or Specialized : Specialized Field of learning : Information system programming network Required, Elective, etc. : Elective must complete subjects(Network program chooser),Others are elective subject, but this year's course will start do not do. Foundational academic disciplines : Electrical and electronic engineering and related fields / Communication and network engineering-related Relationship with Educational Objectives : This class is equivalent to "(3) Acquire deep foundation knowledge of the major subject area" Relationship with JABEE programs : The main goal of learning / education in this class are "(A)... A-2..." Course outline : Comparing analog processing and digital processing has advantages and disadvantages. In recent years, the number of devices and application examples that digitally process analog signals has increased because they are suitable for compression, recording, transmission, and so on. As the basis for these applications, you will learn the basic theory of digital signal processing and the basic technology of images.
Style	Course method : Classes will be conducted using textbooks and supplementary materials, centered on board writing. In addition, related theorems will be supplementarily explained as necessary. Also, impose exercises and quiz reports to deepen understanding. (This class is offered semi-annually) Grade evaluation method : Examination(60%)+Exercises and report assignments (40%). Regular examinations will be conducted 2 times, with each equally weighted.(60%) ・ Each test does not allow notebooks to be brought in. ・ For those who have less than 60 points in each regular test, supplementary lessons will be given, and if the understanding can be confirmed by the retest, the points may be changed. However, the evaluation after the change shall not exceed 60 points. This subject is a compulsory subject to study outside of class hours. Evaluate learning outcomes (exercises, report assignments) outside of class hours (40%).
Notice	Precautions on the enrollment : For network program choosers, 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. Course advice : The basic technology of audio and images will be explained. Furthermore, in order to acquire specific processing, it is necessary to create a program by yourself. Foundational subjects : Fundamenntals of Integrated Science and Technology(1st year), Digital Circuits(2nd), Digital Engineering (3th), Information System Development(3th), Communication Engineeringcal Engineering(4th) Related subjects : Information Theory(5th year), Image Processing(EC-2nd), etc. Attendance advice : In order to understand digital signal processing, it is better to create a program by yourself and check its operation. It is also good to create an image processing program. Check for late arrivals in quarters of class time.Late arrivals of 25 minutes or more are treated as one absence.

Course Plan

			Theme		Goals

1st Semester	1st Quarter	1st	Not offered this year	
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	2nd Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		
2nd Semester	3rd Quarter	1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		
		7th		
		8th		
	4th Quarter	9th		
		10th		
		11th		
		12th		
		13th		
		14th		
		15th		
		16th		

Evaluation Method and Weight (%)

	Examination	Assignments / Mini test	Total
Subtotal	60	40	100
Basic Proficiency	0	0	0
Specialized Proficiency	60	40	100
Cross Area Proficiency	0	0	0