Anan College				Year			ourse Title	Computer Programming Exercises					
Course Information													
Course Code 1213G02 Course Category Specialized / Compulsory													
Class Format					Credits	,	School Credit: 2						
			of Med	chanical Engir	Student Grade		3rd						
Term Year-round				criarricar Erigii	Classes per We	ek	前期:2 後	期・2					
Toythook and/or				shii Duthan mu		CIC	137/312 12	77172					
Teaching		Ichiban y	Ichiban yasashii Python nyuumon kyoshitsu (Sotec)										
Instructor	·												
Course Objectives													
[a] Opera	tion	-		rmation Proce ecute a code a	essing and can run it.								
[b] Constants and Variablesb1) Students can explain what are Constants and Variables.b2) Students can explain what are Integers, Floating Points and Character types.													
[c] Operators c1) Students can understand and implement what are the Operators and their priorities. c2) Students can implement using arithmetic and compare operators.													
[d] I/O d1) Students can implement a software using I/O.													
[e] Control e1) Students can implement a software including a conditional branch. e2) Students can implement a software including a loop.													
		plement a s	softwa	are using one	-dimensional arra	ay.							
Rubric			-										
			Ide	eal Level	Standard Level			Minimum Level					
Achievement 1				achievement on [a], [b], [c] less than			equal to 65 % and % in achievement c] and [d]		d More than or equal to 60 % and less than 65 % in achievement on [a], [b], [c] and [d]				
Achievement 2				More than 80 % in achievement on [e] and [f] More than or equives than 80 % in on [e] and [f]			qual to in ach	al to 65 % and achievement More than or equal to 60 % less than 65 % in achievement on [e] and [f]					
Assigne	d Depart	ment Ob	jecti	ives									
				到達度目標 D-	1								
Teachin	g Metho	 d											
Outline	Learn the syntax of the programming language Python, which is suitable for scientific and technological							scientific and technological					
Style		Sixty hou	urs of	f lecture									
Notice	The "Learning Objectives" in the following "Course Plan" are listed only by items to avoid complicated												
Charact	eristics c	of Class /	Divi	ision in Lea	irning								
☐ Active		,		☑ Aided by ICT ☐ Applicable to			o Remo	ote Class	☐ Instructor Professionally Experienced				
Course	Plan												
			Them	ne			Goals						
1st Semeste r	1st Quarter	1st	What	t is a program	ıram?			Lesson1-1 A collection of instructions. Lesson1-2 How do you create a program? Lesson1-3 What do you need to create a program? Lesson1-4 What should you study?					
		2nd	Let's	s begin Python Le				Lesson2-1 Using Python Lesson2-2 Installing Python Lesson2-3 Let's execute some simple commands Lesson2-4 Playing with interactive mode					
		3rd	Rule	for programir	programing in Python Li				Lesson3-1 Let's compile instructions into a single file Lesson3-2 Let's line up many instructions Lesson3-3 How to open a saved file Lesson3-4 Let's display some text Lesson3-5 Let's concatenate strings				
		4th	Rule	for programir	ng in Python		Lesson3-6 Rules for properly displaying Japanese characters Lesson3-7 Let's display a long string Lesson3-8 The roles of spaces, indentation, and line breaks Lesson3-9 How to write comments to supplement your program						

		5th	Fundamental fund	ctions of a progra	ım	Lesson4-1 The six major elements that make up a program Lesson4-2 Let's try using variables					
		6th	Fundamental fund	ctions of a progra	ım	Lesson4-3 Let's try executing repetitively 1: for loop					
		7th	Fundamental fund	ctions of a progra	ım	Lesson4-4 Let's try executing repetitively 2: while loop					
		8th	Midterm exam			·					
		9th	Fundamental fund	ctions of a progra	ım	Lesson4-5 Conditional branching: if statement					
		10th	Fundamental fund	ctions of a progra	ım	Prime number operations					
	2nd Quarter	11th	Fundamental fund	ctions of a progra	ım	Prime number operations					
		12th	Fundamental fund	ctions of a progra	ım	Prime number operations					
		13th	Fundamental fund	ctions of a progra	ım	Lesson4-6 Using functions Lesson4-7 Extending functionality with modules					
		14th	Fundamental fund	ctions of a progra	ım	Collatz conjecti	Collatz conjecture				
		15th	Fundamental fund	ctions of a progra	ım	Collatz conjecti	Collatz conjecture				
		16th	Final exam								
		1st	Data Structures a	nd Algorithms		List structure	List structure				
		2nd	Data Structures a	nd Algorithms		Other data structures					
		3rd	Data Structures a	nd Algorithms		Examples using	Examples using data structures				
	3rd	4th	GUI			Displaying a window with Tkinter					
	Quarter	5th	GUI			Simple calculator					
		6th	GUI			Calculator with state transitions					
		7th	GUI			Calculator with state transitions					
2nd Semeste		8th	Midterm exam								
		9th	Numerical calcula	tion and graphin	 g	Fitting using the least squares method					
		10th	Numerical calcula	tion and graphin	g	Creating graphs with Matplotlib					
r		11th	Numerical calcula	tion and graphin	g	Application examples to experimental data					
	4th	12th	Challenge image	recognition		Lesson8-1 Challenging AI Lesson8-2 Modules that add functionality to Python					
	Quarter	13th	Challenge image	recognition		Lesson8-3 Let's try using the object detection library "YOLOv8" Lesson8-4 Let's display an image in a window					
		14th	Challenge image	recognition	ognition		Lesson8-5 Let's detect objects with Python				
		15th	Challenge image	recognition		Lesson8-6 Let's train images					
		16th	Final exam								
Evaluat	ion Met	thod and	Weight (%)								
	E	xamination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total			
Subtotal 0			0	0	0	0	0	0			
Basic Proficienc			0	0	0	0	0	0			
Specialized Proficiency 0			0	0	0	0	0	0			
Cross Area Proficiency		1	0	0	0	0	0	0			