Tsuyama College	Year	2021		Course Title	System Programming

Course Information

Course Code	0144		Course Category	Specialized / Compulsory
Class Format	Lecture		Credits	Academic Credit: 2
Department	Department of Integrated Science and Technology Communication and Informations System Program		Student Grade	5th
Term	Second Semester		Classes per Week	2
Textbook and/or Teaching Materials	Linux system programming (Ohm sha)			
Instructor	TAKETANI Hisashi			

Course Objectives

Learning purposes : Learn the basic concepts of Unix system programming.

Course Objectives :
1. Understand and handle the mechanism of process creation and command execution.
2. Understand and handle how files and directories work.
3. Understand and handle standard I / O and pipelines.
4. Understand signal processing and be able to manage the process.
5. Understand the concept of job control and be able to use interprocess communication.

Rubric

	Excellent	Good	Acceptable	Not acceptable
Achievement 1	Understand the mechanism of process creation and command execution and handle it appropriately.	Understand and handle the mechanism of process creation and command execution.	Understand how processes are created and commands are executed.	It has not reached the left.
Achievement 2	Understand how files and directories work and handle them appropriately.	Understand and handle how files and directories work.	Understand how files and directories work.	It has not reached the left.
Achievement 3	Understand the mechanism of standard I / O and pipelines and handle them appropriately.	Understand and handle standard I / O and pipelines.	Understand how standard I / O and pipelines work.	It has not reached the left.
Achievement 4	Understand signal processing and manage processes appropriately.	Understand signal processing and manage processes.	Understand signal processing.	It has not reached the left.
Achievement 5	Understand the concept of job control and be able to use interprocess communication appropriately.	Understand the concept of job control and be able to use interprocess communication.	Understand the concept of job control.	It has not reached the left.

Assigned Department Objectives

Teaching Method

Outline	General or Specialized : Specialized Field of learning : Information system programming network Required, Elective, etc. : Must complete subjects Foundational academic disciplines : Information science, information engineering and related fields / computer system 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 goals of learning / education in this class are "(A) ,(A-2)". Course outline : We will cover the basics of UNIX system programming using the C language used to build operating systems.
Style	Course method : Due to the timetable, this course will be held in the second half of 2 credit hours. Explanations will be given by presenting slides and writing on the board. Also, impose relevant exercises to deepen understanding. Grade evaluation method : Average of 2 regular exams (70%), exercises (30%). As a general rule, retests will not be conducted. Materials are allowed to be brought into the regular examination.
Notice	Precautions on the enrollment : Students must take this class (no more than one-third of the required number of class hours missed) in order to complete the 5th year course. Course advice: Thoroughly review the basics of programming you have learned so far. Foundational subjects: Basic Programming(2nd year), Algorithms and Data Structures(3rd), Advanced Programming(4th) Related subjects: Control Programming(5th year) Attendance advice : The class will proceed while explaining the basics and capabilities of the operating system. In addition, we will explain how to use each function with examples, so be proactive in programming. Attendance will be confirmed at the beginning of the class, and if you enter the room within 25 minutes of the start of the class, you will be late, and if you are late 3 times, you will be absent from class.

Characteristics of Class / Division in Learning

				Active Learning		Aided by ICT		Applicable to Remote Class		Instructor Professionally Experienced

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Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance, Unix basics	You can use the goals of this lesson and basic Unix commands.
		2nd	Basics of C programming (variables, functions, syntax)	Explain the basics of C programming (variables, functions, syntax).
		3rd	Basics of C programming (operators, pointers, structures)	Explain the basics of C programming (operators, pointers, structures).
		4th	Basics of C programming (library functions, prototype declarations, preprocessors)	Explain the basics of C programming (library functions, prototype declarations, preprocessors).
		5th	Process spawning and command execution	Explain the creation of processes and the execution of commands.
		6th	File system	Explain the file system.
		7th	Standard I / O and pipeline	Explain standard I / O and pipelines.
		8th	(2nd semester mid-term exam)	
	4th Quarter	9th	Return and commentary of exam answers	
		10th	Processes and signals	Explain processes and signals.
		11th	Interprocess communication using shared memory	Explain interprocess communication using shared memory.
		12th	Interprocess communication using messages	Explain interprocess communication using messages.
		13th	Interprocess communication using semaphores	Explain interprocess communication using semaphores.
		14th	Thread	Explain threads.
		15th	(2nd semester final exam)	
		16th	Return and commentary of exam answers	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	70	0	0	0	30	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	70	0	0	0	30	0	100
Cross Area Proficiency	0	0	0	0	0	0	0