Tsuyama College	Year	2021	Course Title	Information System Engineering Experiments and Practice Ⅰ

Course Information

Course Code	0033	Course Category	Specialized / Compulsory
Class Format	Experiment	Credits	School Credit: 2
Department	Department of Integrated Science and Technology Communication and Informations System Program	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	Textbooks : Instruct separately, Reference books : Instruct separately for each theme.		
Instructor	TAKETANI Hisashi		

Course Objectives

Learning purposes : By conducting experimental themes of information systems and electrical and electronic systems throughout the year, we aim to acquire the basic knowledge and skills required in these fields.

Course Objectives :
1. Acquisition of basic knowledge and technology related to electric circuits
2. Learn and understand basic UNIX operations
3. 3. Confirmation and understanding of basic knowledge about programming
4. Understanding of basic technology of logic circuits
5. Understanding of basic technology of device control by embedded programming
◎6. Understand experimental methods, procedures, and data processing for understanding basic principles and phenomena.
◎7. You will be accustomed to the operation of experimental equipment and measuring instruments and the handling of laboratory equipment, and will be able to conduct experiments safely.

Rubric

	Excellent	Good	Acceptable	Not acceptable
Achievement 1	You can take the initiative in programming training, associate it with the lecture content of specialized subjects, and tackle advanced issues.	You can participate in programming training independently and associate it with the lecture content of specialized subjects.	You can participate in programming training with independence.	You cannot participate in programming training independently.
Achievement 2	You can take the initiative in electrical circuit training, associate it with the lecture content of specialized subjects, and tackle advanced issues.	You can take the initiative in participating in electrical circuit training and associate it with the lecture content of specialized subjects.	You can participate in the electric circuit training with independence.	It is not possible to participate in the electric circuit training independently.
Achievement 3	You can take the initiative in Linux training, associate it with the lecture content of specialized subjects, and work on advanced application tasks.	You can participate in Linux training independently and associate it with the lecture content of specialized subjects.	You can participate in Linux training independently.	You cannot take the initiative to participate in Linux training.
Achievement 4	You can take the initiative in participating in logic circuit training, associate it with the lecture content of specialized subjects, and tackle advanced issues.	You can take the initiative in participating in logic circuit training and associate it with the lecture content of specialized subjects.	You can participate in logic circuit training with independence.	It is not possible to participate in logic circuit training independently.
Achievement 5	You can take the initiative in control training, associate it with the lecture content of specialized subjects, and tackle advanced issues.	Participate in control training independently and can relate to the lecture content of specialized subjects.	You can participate in control training with independence.	It is not possible to participate in control training independently.
Achievement 6	Understand experimental methods, procedures, and data processing for understanding basic principles and phenomena.	Understand experimental methods and procedures for understanding basic principles and phenomena.	Understand experimental methods for understanding basic principles and phenomena.	Not reached the left
Achievement 7	You will be accustomed to the operation of experimental equipment and measuring instruments and the handling of laboratory equipment, and will be able to conduct experiments safely.	You can operate the experimental equipment and measuring equipment and perform experiments.	Experiments can be conducted safely.	Not reached the left

Assigned Department Objectives

Teaching Method

Outline	General or Specialized : Specialized Field of learning : Experiment / Practice Required, Elective, etc. : Required subjects Foundational academic disciplines : Informatics / Computational Infrastructure / Software, Engineering / Electrical and Electronic Engineering / Electronic Devices / Electronic Equipment Relationship with Educational Objectives : 各目標の英訳はすでにあるもの（右記）を使用。 例：本科目は「①教養豊かな実践的人間力の養成」「⑤グローバルな視点と社会性の養成」及び，「⑦コミュニケーションカ・プレゼンテーションカの育成」に相当する科目である。 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)". Course outline : Learn basic knowledge / technology and equipment operation through experiments on information systems and electrical / electronic systems. The information system conducts basic programming, UNIX basic operations, logic circuit exercises and built-in programming, and the electrical and electronic systems conduct basic experiments on electrical and electronic circuits and exercises on the handling of measuring equipment.
Style	Course method : The experiment is divided into 3 groups, and each group patrols 3 laboratories every 4 weeks. Students carry out exercises and assignments on the experimental themes set in each laboratory, and submit experimental reports. In principle, the experiment report should be submitted in the week following the experiment implementation week. An example of a lesson plan by the first group is shown below. Grade evaluation method : It is essential that all experiments have been conducted and that all reports have been submitted. Then, evaluate in the first half (50%) and the second half (50%). Evaluation will be made for the submission of assignments imposed on each experimental theme. Evaluate each theme equally in both the previous and subsequent periods.
Notice	Precautions on the enrollment : Since this course is mainly for practical skills, it is essential to take it (the number of absentee hours is one-third or less of the prescribed number of class hours) in order to complete the course of the academic year. Course advice : In both the first and second semesters, not only experiment according to the procedure of the experiment text, but also try to understand the theoretical background. Foundational subjects : Information Literacy(1st year), Experimental Practice for Science and Engineering(1st), Related subjects : Electrical and Electronic Circuits(2nd),Digital Engineering(2nd),Basic Programming(2),Basic Information Networks(2nd), Algorithms and Data Structures(3rd),Information System Development(3rd),Information System Engineering Experiments and Practice Ⅱ(3rd),Information System Engineering Experiments(4th),Graduation Thesis(5th), etc. Attendance advice : The knowledge required to carry out the experiment will be explained at the beginning of each time. Listen quietly to the explanation and ask questions immediately if you do not understand. Since this is the first time you will be using the measuring device in earnest, listen carefully to the explanation of the operation and be careful not to make an erroneous operation. In addition, since experiments are often conducted in groups, if you are late, the experiment may not be possible and you may have to re-experiment immediately.

Characteristics of Class / Division in Learning

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

Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Comprehensive guidance for experiments by 3 groups (common to all groups)	Understand the goals of the first half experiment
		2nd	DC circuit, etc.	Understand the basics of DC circuits
		3rd	DC circuit, etc.	Understand the basics of DC circuits
		4th	Low frequency amplifier circuit	Understand the basics of low-frequency amplifier circuits
		5th	Low frequency amplifier circuit	Understand the basics of low-frequency amplifier circuits
		6th	Basic programming exercises	Can solve basic programming problems
		7th	Basic programming exercises	Can solve basic programming problems
		8th		
	2nd Quarter	9th	Basic programming exercises	Can solve basic programming problems
		10th	Basic programming exercises	Can solve basic programming problems
		11th	Network basic exercise	Understand the basics of computer networks
		12th	Network basic exercise	Understand the basics of computer networks
		13th	Network basic exercise	Understand the basics of computer networks
		14th	Network basic exercise	Understand the basics of computer networks
		15th		
		16th	Guidance (re-experiment, report submission, etc.)	
2nd Semester	3rd Quarter	1st	Comprehensive guidance for experiments by 3 groups	Understand the goals of late experiments
		2nd	Electric circuit, etc.	Understand the basic characteristics of electric circuits

		3rd	Electric circuit, etc.	Understand the basic characteristics of electric circuits
		4th	Electric circuit, etc.	Understand the basic characteristics of electric circuits
		5th	Electric circuit, etc.	Understand the basic characteristics of electric circuits
		6th	Logic circuit, etc.	Understand the basic characteristics of logic circuits
		7th	Logic circuit, etc.	Understand the basic characteristics of logic circuits
		8th		
	4th Quarter	9th	Arduino control experiment	You can do control programming using Arduino
		10th	Arduino control experiment	You can do control programming using Arduino
		11th	Programming exercises	You can solve problems using programming
		12th	Programming exercises	You can solve problems using programming
		13th	Programming exercises	You can solve problems using programming
		14th	Programming exercises	You can solve problems using programming
		15th		
		16th	Guidance (re-experiment, report submission, etc.)	

Evaluation Method and Weight (%)

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