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

Course Information

Course Code	0027	Course Category	Specialized / Compulsory
Class Format	Experiment	Credits	School Credit: 2
Department	Department of Integrated Science and Technology Electrical and Electronic Systems Program	Student Grade	2nd
Term	Year-round	Classes per Week	2
Textbook and/or Teaching Materials	Textbooks : "Electric and Electronic System Engineering Experiments and Practice Ⅰ text"		
Instructor	OKE Shinichiro,MINATOHARA Tetsuya,YAMAMOTO Tsunayuki,NAKAMURA Naoto		

Course Objectives

Learning purposes :
To learn the basic principles and rules of electrical and electric equipments studied in classroom learning.
Course Objectives :
1. To understand how to use experimental equipments and achieve the objective.
2. To understand knowledges of the basic engineering.
3. To consider and explain as engineer regarding data obtained from the experiments.
◎To behave cooperatively with others to achieve the objective.

Rubric

	Excellent	Good	Acceptable	Not acceptable
Achievement 1	A student definitely understands how to use experimental equipment and achieve the objective.	A student mostly understands how to use experimental equipment and achieve the objective.	A student partly understands how to use experimental equipment and achieve the objective.	A student does not understand how to use experimental equipment and achieve the objective.
Achievement 2	A student definitely understands knowledges of the basic engineering.	A student mostly understands knowledges of the basic engineering.	A student partly understands knowledges of the basic engineering.	A student does not understand knowledges of the basic engineering.
Achievement 3	A student definitely considers and explains as an engineer regarding data obtained from the experiments.	A student mostly considers and explains as an engineer regarding data obtained from the experiments.	A student partly considers and explains as an engineer regarding data obtained from the experiments.	A student does not consider and explain as an engineer regarding data obtained from the experiments.

Assigned Department Objectives

Teaching Method

Outline	General or Specialized : Specialized Field of learning : Experiment , Practice Foundational academic disciplines : Engineering / Electrical and Electronics Engineering Relationship with Educational Objectives : This class is equivalent to "(3) Acquire deep foundation knowledge of the major subject area" and "(6) Develop problem solving ability". Relationship with JABEE programs : The main goals of learning / education in this class are "(A) ,A-2:". Course outline : To understand electrical and electronics subjects leant in the 1st year deeply through the basic experiences such as electric wiring as well as students become used to the treatment of the equipment.
Style	Course method : There are two groups. Each student makes a datasheet or a report. Grade evaluation method : Report (70%) + Attendance (30%).
Notice	Precautions on the enrollment : Students must take this class (no more than one-third of the required number of class hours missed) and earn the credit in order to complete the 2nd year course. Course advice : To understand its contents and procedures, a student must read the textbook in advance. Appropriate clothing is required for safety. A student must wear clothing (cap and pants) in which experiments can be conducted and bring your calcularor. Foundational subjects : Fundamentals of Integrated Science and Technology (1st year), Experimental Practice for Science and Engineering (1st), Integrated Science and Technology Practice (2nd), Electrical Apparatus Ⅰ(2nd), Basic Electrical Controls (2nd). Related subjects : Electric and Electronic System Engineering Experiments and Practice Ⅱ (3rd year), Trans Exercise of All Programs Ⅰ, Ⅱ (3rd, 4th), Electric and Electronic System Engineering Experiments (4th) Attendance advice : To comprehend the contents of the experiment by reading the text in advance. If you are late for the start time, you will be treated as absent after 15 minutes.

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

1st Semester	1st Quarter	1st	Guidance	
		2nd	Electronic circuit design (1)	To be able to design of electronical circuits.
		3rd	Electronic circuit design (2)	To be able to design of electronical circuits.
		4th	Electronic circuit design (3)	To be able to design of electronical circuits.
		5th	Electronic circuit design (4)	To be able to design of electronical circuits.
		6th	Electronic circuit design (5)	To be able to design of electronical circuits.
		7th	Electronic circuit design (6)	To be able to design of electronical circuits.
		8th	Occasional date	
	2nd Quarter	9th	Design of a PK robot using LEGO Mindstorms (1)	To be able to make a PK robot and its programming
		10th	Design of a PK robot using LEGO Mindstorms (2)	To be able to make a PK robot and its programming
		11th	Design of a PK robot using LEGO Mindstorms (3)	To be able to make a PK robot and its programming
		12th	Design of a PK robot using LEGO Mindstorms (4)	To be able to make a PK robot and its programming
		13th	Design of a PK robot using LEGO Mindstorms (5)	To be able to make a PK robot and its programming
		14th	Design of a PK robot using LEGO Mindstorms (6)	To be able to make a PK robot and its programming
		15th	Occasional date	
		16th	Occasional date	
2nd Semester	3rd Quarter	1st	Guidance	
		2nd	Kirchhoff's law (DC)	To understand the Kirchhoff's law
		3rd	How to use an oscilloscope	To earn how to use an oscilloscope
		4th	Property of AC circuit (1)	To understand the basic property of AC circuit
		5th	Property of AC circuit (2)	To understand the basic property of AC circuit
		6th	Property of AC circuit (3)	To understand the basic property of AC circuit
		7th	Property of AC circuit (4)	To understand the basic property of AC circuit
		8th	Property of AC circuit (5)	To understand the basic property of AC circuit
	4th Quarter	9th	Property of AC circuit (6)	To understand the basic property of AC circuit
		10th	Occasional date	
		11th	Interior wiring (1)	To understand interior wiring
		12th	Interior wiring (2)	To understand interior wiring
		13th	Measurement of resistances	To understand resistance values
		14th	Overcurrent circuit breaker	To understand a dynamic property of an overcurrent circuit breaker
		15th	Occasional date	
		16th	Occasional date	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluation	Attitude	Report	Other	Total
Subtotal	0	0	0	30	70	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	0	0	30	70	0	100
Cross Area Proficiency	0	0	0	0	0	0	0