Toyama College	Year	2022	Course Title	Basic Electronics and Computer Engineering

Course Information

Course Code	0003	Course Category	Specialized / Compulsory
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electronics and Computer Engineering	Student Grade	1st
Term	Second Semester	Classes per Week	2
Textbook and/or Teaching Materials	精選電気基礎（実教出版），精選電気基礎演習ノート（実教出版）		
Instructor	Yamaguchi Akifumi		

Course Objectives

1. Understand the electricity (Ohm's law, Kirchhoff's law, etc.) correctly.
2. Understand the calculate the basic quantities related to electricity.
3. Understand the magnetism (Coulomb's law concerning magnetism, etc.) correctly.

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Achievement 1	Can Understand the basic matters concerning electricity almost perfectly.	Can Understand the basic matters concerning electricity correctly.	Can't Understand the basic matters concerning electricity correctly.
Achievement 2	Can Understand the calculation method of basic quantities concerning electricity almost perfectly.	Can Understand the calculation method of basic quantities concerning electricity correctly.	Can't Understand the calculation method of basic quantities concerning electricity correctly.
Achievement 3	Can Understand the basic matters concerning magnetism almost perfectly.	Can Understand the basic matters concerning magnetism correctly.	Can't Understand the basic matters concerning magnetism correctly.

Assigned Department Objectives

ディプロマポリシー 1

Teaching Method

Outline	Understand the explanation of basic electrical phenomena and the correct treatment of various laws and mathematical methods. In parallel with classroom lectures, students are given an interest in electricity through displays and demonstrations using electrical test equipment, etc., and are given an explanation of individual cases that are overflowing with home and social life.
Style	Basic technology related to the basics of electricity shall be provided. Lectures by teachers alone shall be conducted. Experiments and simulations shall be incorporated to make the lectures visually understandable.
Notice	In this subject, units are recognized based on an evaluation of 50 points or more. Those who have an evaluation of less than 50 points may take the confirmatory examination upon their request.

Characteristics of Class / Division in Learning

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

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Electron and current	Understand the transfer and current of free electrons.
		2nd	DC circuit calculation	Understand the calculation methods such as the series connection of resistors, the combined resistance of parallel connected circuits.
		3rd	Serial parallel circuit calculation	Understand the calculation method of the combined resistance.
		4th	Kirchhoff's law 1	Understand the Kirchhoff's law can be used to explain the formulation of simultaneous equations for circuits.
		5th	Kirchhoff's law 2	Understand the Kirchhoff's law can be used to explain the construction of the simultaneous equations and the direction of the current in the circuit.
		6th	Resistance of the conductor	Understand the resistance of a conductor depends on the material and shape of the material.
		7th	Various resistance	Understand the Various shapes and types of resistors.
		8th	Mid-term exams	
	4th Quarter	9th	Electricity and power consumption	Understand the meaning of electric power and electric power consumption.
		10th	Current Heating and Thermoelectric	Understand the heating effect of electric current.
		11th	Magnet and magnetic	Understand the force acting between the poles.
		12th	Coulomb's law of magnetism	Understand the Coulomb's law of magnetism.
		13th	Magnetic induction and magnetic shielding	Understand the action of magnets to magnetize iron
		14th	Magnetic flux and flux density	Understand the meaning of magnetic flux.
		15th	Final exam	Final exam
		16th	Return the final exam	Return the final exam

Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	100	0	0	0	0	0	100
Basic Proficiency	100	0	0	0	0	0	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0