Toyama College	Year	2022	Course Title	Fundamental Information Technology Ⅱ

Course Information

Course Code	0036	Course Category	Specialized / Elective
Class Format	Lecture	Credits	School Credit: 1
Department	Department of Electrical and Control Systems Engineering	Student Grade	2nd
Term	First Semester	Classes per Week	2
Textbook and/or Teaching Materials	新保, 松尾 共著，電子計算機概論，森北出版　　柴田著，新・明解C言語 入門編，SBクリエイティブ		
Instructor	Sato Keisuke		

Course Objectives

Through this course, understanding of the following will be facilitated
(1) Logical function and Truth table
(2) Canonical forms of logical function
(3) Karnaugh map
(4) Construction of combinational circuits
(5) Construction of sequential circuits
(6) Rudimentary C Programming

Rubric

	Ideal Level	Standard Level	Unacceptable Level
Evaluation 1	Clearly understands the logical function and Truth table	Ability to explain the logical function and Truth table	Unable to explain the logical function and Truth table
Evaluation 2	Clearly understands Canonical forms of logical function	Ability to explain Canonical forms of logical function	Unable to explain Canonical forms of logical function
Evaluation 3	Clearly understands Karnaugh map	Ability to explain Karnaugh map	Unable to explain Karnaugh map
Evaluation 4	Clearly understands the construction of combinational circuits	Ability to explain the construction of combinational circuits	Unable to explain the construction of combinational circuits
Evaluation 5	Clearly understands the construction of sequential circuits	Ability to explain the construction of sequential circuits	Unable to explain the construction of sequential circuits
Evaluation 6	Clearly understands the rudimentary C Programming	Ability to explain the rudimentary C Programming	Unable to explain the rudimentary C Programming

Assigned Department Objectives

ディプロマポリシー 1

Teaching Method

Outline	At present, computers are infiltrated in various places, regardless of the size, whether they can be seen or not. In this course, we consider a computer as one of the applications of digital circuits and aim to understand the mathematics, expression methods, and circuit construction methods for handling digital circuits.
Style	Lectures and exercises
Notice	

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	Various computer and network systems	Learn the various computer and network systems
		2nd	Fundamental logical functions and Truth table	Learn the fundamental logical functions and Truth table
		3rd	Boolean algebra and expression of logical functions	Learn the Boolean algebra and expression of logical functions
		4th	Expansion theorem and canonical forms (1)	Learn the disjunctive canonical forms
		5th	Expansion theorem and canonical forms (1)	Learn the conjunctive canonical forms
		6th	Construction of combinational circuits	Learn the construction of combinational circuits
		7th	Simplification of logical functions (1)	Learn the simplification of logical functions using Karnaugh map
		8th	Simplification of logical functions (2)	Practice the simplification of logical functions using Karnaugh map
	2nd Quarter	9th	Examination	Midterm examination to assess the current ability
		10th	Explanation of the examination	Explain the midterm examination
		11th	Various combinational circuits	Learn the decoder multiplexer circuits
		12th	Comparison circuit	Learn the comparison circuit
		13th	Parity check circuit	Learn the parity check circuit
		14th	Adder circuit	Learn the adder circuit
		15th	Examination	
		16th	Explanation of the examination	Explain the examinations and summarize the study content

Evaluation Method and Weight (%)							
	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	60	20	0	0	0	20	100
Basic Proficiency	45	20	0	0	0	15	80
Specialized Proficiency	15	0	0	0	0	5	20
Cross Area Proficiency	0	0	0	0	0	0	0