

Anan College		Year	2024		Course Title	Fundamentals of Electrical and Electronics	
Course Information							
Course Code		1313D11		Course Category		Specialized / Compulsory	
Class Format				Credits		School Credit: 2	
Department		Course of Electrical Engineering		Student Grade		3rd	
Term		Year-round		Classes per Week		前期:2 後期:2	
Textbook and/or Teaching Materials		Distribute materials each time / None					
Instructor		Komatsu Minoru,goto yumi					
Course Objectives							
1. Understand all aspects of electrical and electronic equipment that lead to qualification exams, and be able to solve various problems. 2. Understand programming and be able to create basic programs. 3. Understand game literacy, industry, etc. through e-sports.							
Rubric							
		Ideal achievement level		Standard achievement level		Minimum achievement level (possible)	
Achievement 1		Able to understand all aspects of electrical and electronic equipment that lead to qualification exams, and be able to solve applied problems.		Able to understand all aspects of electrical and electronic equipment that lead to qualification exams, and be able to solve basic problems.		Able to understand some of the electrical and electronic aspects that lead to the qualification test, and can solve some basic problems.	
Achievement 2		Able to understand programming and be able to create basic programs.		Able to broadly understand programming and create a few basic programs.		Unable to understand all programming but can create some basic programs.	
Achievement 3		Able to understand game literacy, industry, etc. through e-sports.		Able to understand the basics of game literacy, industry, etc. through e-sports.		Able to partially understand game literacy, industry, etc. through e-sports.	
Assigned Department Objectives							
学習・教育到達度目標 B-4							
Teaching Method							
Outline		In the first semester, we will tackle various problems centering on qualification exam preparation, and in the second semester, we will mainly study the C language as the basics of programming. In the second half, we will practice learning through e-sports.					
Style		In the first semester, we will learn how to solve qualification exam questions, and in the second semester, we will learn the basics of programming using the practice room and practice learning through e-sports.					
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 r	1st Quarter	1st	Explanation of the entire class. Explain basic knowledge of data science and AI technologies.		Be able to give an overview of data science, the need for data scientists, and how data science and AI technology is a tool for solving problems in society and daily life.		
		2nd	Explain the representation of data.		Understand the types and characteristics of graphs and be able to graph data using Excel.		
		3rd	Explain the description of the data.		Understand representative values, data variability, and correlation coefficients in 1- and 2-dimensional data.		
		4th	Supplemental the description of the data.		Understand representative values, data variability, and correlation coefficients in 1- and 2-dimensional data.		
		5th	Explain the data analysis methodology.		Understand an overview of single regression analysis, multiple regression analysis, and logistic regression analysis, and be able to solve problems with single regression analysis using the least squares method.		
		6th	Explain AI fundamentals.		Understand the history of AI, its various domains, difficult problems, and the morals and ethics required when utilizing AI technology.		
		7th	Explain the fundamentals of machine learning and deep learning.		Understand the overview of supervised learning, unsupervised learning, and reinforcement learning of machine learning, as well as neural networks, DNN, CNN, RNN, GAN, etc.		
		8th	Explain database and system construction.		Understand the structure, operation, and creation procedures of databases. Also, understand the system development process and development methods such as the V-shaped model.		

	2nd Quarter	9th	Explain the fundamentals and configuration of the network.	Knowledge of the structure, composition and components of information and communication networks, the role of protocols and technologies, and be able to explain the role of information and communication networks in society.
		10th	Supplemental the fundamentals and configuration of the network.	Knowledge of the structure, composition and components of information and communication networks, the role of protocols and technologies, and be able to explain the role of information and communication networks in society.
		11th	Explain the fundamentals and elements of information security.	Explain the need for information security and countermeasures, the three elements, and information access restrictions and authentication methods.
		12th	Explain cyber attacks and defenses.	Understand the official rules and regulations concerning information and communications and their necessity, as well as the importance of manners and morals in living in an information society.
		13th	Explain the laws, regulations, and policies related to information and telecommunications.	Understand the official rules and regulations concerning information and communications and their necessity, as well as the importance of manners and morals in living in an information society.
		14th	Explain risk management and security management in handling information.	Understand the threats and risks in handling information, and know their level of danger, countermeasures, response methods, and how to respond to incidents.
		15th	Explain basic knowledge of data science and AI technologies.	Understand the basic knowledge of data science and AI technologies.
		16th		
2nd Semester	3rd Quarter	1st	Describe the programming language.	Understand programming and be able to create basic programs.
		2nd	Learn the basics of programming.	Understand programming and be able to create basic programs.
		3rd	Learn the basics of programming.	Understand programming and be able to create basic programs.
		4th	Learn the basics of programming.	Understand programming and be able to create basic programs.
		5th	Learn the basics of programming.	Understand programming and be able to create basic programs.
		6th	Learn the basics of programming.	Understand programming and be able to create basic programs.
		7th	Learn the basics of programming.	Understand programming and be able to create basic programs.
		8th	Learn the basics of programming.	Understand programming and be able to create basic programs.
	4th Quarter	9th	Create a basic program.	Understand programming and be able to create basic programs.
		10th	Create a basic program.	Understand programming and be able to create basic programs.
		11th	Create a basic program.	Understand programming and be able to create basic programs.
		12th	Explain the outline of e-sports (game literacy, industry, etc.).	Understand game literacy, industry, etc. through e-sports.
		13th	Examine electrical and electronic related technologies through experiencing e-sports.	Understand game literacy, industry, etc. through e-sports.
		14th	Consider electrical and electronic related technologies related to e-sports.	Understand game literacy, industry, etc. through e-sports.
		15th	Learn the basics of programming about games.	Understand game literacy, industry, etc. through e-sports.
		16th		

Evaluation Method and Weight (%)

	Routine Exam	Little Test	Portfolio	Announcement / approach attitude		Other	Total
Subtotal	0	50	40	10	0	0	100
Basic Proficiency	0	10	10	0	0	0	20
Specialized Proficiency	0	40	30	0	0	0	70
Cross Area Proficiency	0	0	0	10	0	0	10