

Tsuyama College		Year	2020		Course Title	Exercises of Energy Systems	
Course Information							
Course Code		0152		Course Category		Specialized / Elective	
Class Format		Seminar		Credits		Academic Credit: 2	
Department		Department of Integrated Science and Technology Communication and Informations System Program		Student Grade		5th	
Term		Year-round		Classes per Week		1	
Textbook and/or Teaching Materials							
Instructor		OKE Shinichiro					
Course Objectives							
Learning purposes : To understand the concept of energy, types of energy, methods of supply and use, and the relationship between the environment and energy. To understand the energy systems that support modern society.							
Course Objectives : 1. To be able to explain the concepts, definitions, and types of energy. 2. To be able to explain the various ways of supplying and using energy. 3. To be able to explain the relationship between energy and the global environment. 4. To be able to read the meaning of a text correctly and explain it.							
Rubric							
	Excellent		Good		Acceptable		Not acceptable
Achievement 1	The student can explain the concepts, definitions, and types of energy.		The student can explain the basics of the concepts, definitions, and types of energy.		The student can explain a little bit of the concepts, definitions, and types of energy.		The student cannot explain the concepts, definitions, and types of energy.
Achievement 2	The student can explain the various ways of supplying and using energy.		The student can explain the basics of the various ways of supplying and using energy.		The student can explain a little bit of the various ways of supplying and using energy.		The student cannot explain the various ways of supplying and using energy.
Achievement 3	The student can explain the relationship between energy and the global environment.		The student can explain the basics of the relationship between energy and the global environment.		The student can explain a little bit of the relationship between energy and the global environment.		The student cannot explain the relationship between energy and the global environment.
Achievement 4	Students can read the meaning of a text correctly and explain it.		Students can read the meaning of a text almost correctly and explain it.		Students can read the meaning of a text a little correctly and explain it.		Students cannot read the meaning of a text correctly and explain it.
Assigned Department Objectives							
Teaching Method							
Outline	General or Specialized : Specialized Field of learning : Electrical and Electronic Required, Elective, etc. :Elective must complete subjects Foundational academic disciplines : Engineering / Electrical and electronic engineering and related fields / Power engineering-related Relationship with Educational Objectives : This class is equivalent to "(2) Acquire basic science and technical knowledge" and . "(3) Acquire deep foundation knowledge of the major subject area". Relationship with JABEE programs : The main goals of learning / education in this class is "A-2". Course outline : This class covers the origins of the energy systems that support modern society, their composition, and their relationship to the global environment and economy.						
Style	Course method : This class will be offered in the first or second semester. Textbooks and handouts will be used in this class. Students will be required to download and bring their own handouts. Grade evaluation method : Two reports (50%) + Peer Evaluations between students (25%) + Additional reports completed outside of class time (25%).						
Notice	※Precaution on the enrollment. This is a class that requires study outside of class hours. Classes is offered for 15 hours per credit ,but 30 credet hours are required in addition to this. Follow the instructions of your instructor for these studies. Course advice : Read the textbook before class. Foundational subjects : Design of Electrical and Electronic Machinery (4th year), High Voltage Engineering (4th), Electrical Application and Environment (4th). Related subjects : Energy and Environmental Engineering (5th year).						
Course Plan							
			Theme			Goals	
1st Semester r	1st Quarter	1st	Guidance			Be able to understand how to conduct the class.	
		2nd	Humanity and the earth, energy 1			Be able to explain the formation of the concept of energy and the transition of humanity's energy use.	
		3rd	Humanity and the earth, energy 2			Be able to explain the energy resource endowment and global warming.	

		4th	The science and engineering of energy 1	Be able to explain the nature and form of energy.
		5th	The science and engineering of energy 2	Be able to explain the basic laws of thermodynamics.
		6th	Primary energy supply characteristics	Be able to explain the supply of coal, crude oil, natural gas and nuclear fuel.
		7th	Secondary energy supply system	Be able to explain the composition of the electric power system and the supply of city gas and petroleum products.
		8th	1st semester mid-term exam	
	2nd Quarter	9th	Return and commentary of exam answers	
		10th	Energy use and environmental issues 1	Be able to explain the environmental issues related to energy.
		11th	Energy use and environmental issues 2	Be able to explain policies to promote energy supply efficiency and new energy.
		12th	Economy and energy	Be able to explain the changes in the energy situation in Japan and the world.
		13th	The future of energy supply systems 1	Be able to explain the problems of the global energy supply system.
		14th	The future of energy supply systems 2	Be able to explain the next generation of energy supply systems.
		15th	(1st semester final exam)	
		16th	Return and commentary of exam answers	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Self evaluation	Reports	Other	Total
Subtotal	0	0	25	0	75	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	0	0	0	75	0	75
Cross Area Proficiency	0	0	25	0	0	0	25