

Tsuyama College		Year	2024		Course Title	Electric and Electronic Apparatus	
Course Information							
Course Code	0008			Course Category	Specialized / Elective		
Class Format	Lecture			Credits	Academic Credit: 2		
Department	Advanced Electronics and Information System Engineering Course			Student Grade	Adv. 1st		
Term	Second Semester			Classes per Week	2		
Textbook and/or Teaching Materials	Distribute materials						
Instructor	YAGI Hideyuki						
Course Objectives							
Learning purposes : Understand the basic ideas and technological trends common to all electrical and electronic device designs through examples, and acquire the basics of standards and reliability required for design. This will contribute to the improvement of the conceptual power of equipment design and the integrated application ability of various technologies.							
Course Objectives : 1. Understand the basic ideas and technological trends common to electrical and electronic device design in general. 2. Understand the basic concept of reliability required for designing electrical and electronic devices. 3. Understand technological trends related to sensors.							
Rubric							
	Excellent		Good		Acceptable		Not acceptable
Achievement 1	The student can understand and apply basic ideas and technological trends common to electrical and electronic device design in general.		The student can understand and explain basic ideas and technological trends common to electrical and electronic device design in general.		The student can understand the basic ideas and technological trends common to all electrical and electronic device designs.		The student will not try to understand the basic ideas and technological trends common to all electrical and electronic device designs.
Achievement 2	The student can understand and utilize the basic concept of reliability required for designing electrical and electronic equipment.		The student can understand and explain the basic concept of reliability required for designing electrical and electronic equipment.		The student can understand the basic concepts of reliability required for the design of electrical and electronic equipment.		The student will not try to understand the basic concepts of reliability required for the design of electrical and electronic equipment.
Achievement 3	The student can understand and utilize the basic concepts of sensors.		The student can understand and explain the basic concepts of sensors.		The student can understand the basic concepts of sensors.		The student will not try to understand the basic concepts of sensors.
Assigned Department Objectives							
Teaching Method							
Outline	General or Specialized : Specialized Field of learning : Foundational academic disciplines : Engineering / Electrical and electronic engineering / Power and measurement engineering Relationship with Educational Objectives : This class is equivalent to "(2) Acquire basic science and technical knowledge". Course outline : Electrical and electronic equipment is finally designed by comprehensively considering standards, reliability, price, etc., after basic design that requires various quantities based on the design theory of each equipment so as to satisfy the specified specifications and performance. The theory. In this lecture, we will use electric power equipment as an example to learn the technical points to be considered before the final design. In addition, learn recent cases regarding technological trends that designers should always consider.						
Style	Course method : Based on the teaching materials, information obtained from the library and the Internet, the class will be conducted in a way that the student in charge presents the relevant theme to other students in an easy-to-understand manner. Imposing reports and exercises as appropriate. Grade evaluation method : Presentation (40%) + Presentation attitude (30%) + Tasks (30%). The presentation evaluates the level of survey fulfillment, comprehension, comprehension of explanation, presentation attitude, and question-and-answer status.						

Notice	Precautions on the enrollment : This is a class that requires study outside of class hours. A total of 45 hours of study is required per credit, including both class time and study outside class time. Follow the instructions of the instructor regarding study outside of class hours.
	Course advice : As a preparatory study to be done in advance, review the contents of the electrical equipment that is the basic subject. Students from the Department of Computer Science may find it difficult to understand the concept of electrical equipment, so it is a good idea to review the basics of electrical equipment.
	Foundational subjects : Electromagnetism II (4th year), Design of Electrical and Electronic Machinery (4th)
	Related subjects : Power Electronics (Adv. 2nd year)
	Attendance advice : Instead of taking a passive attitude of listening to the lecture, convey the results of your preparation to other students in an easy-to-understand manner, exchange opinions with teachers and other students, and ask other presenters from a critical point of view. I want you to come to the class as a place to give comments. If it is within 25 minutes of the start of the class, it will be late, and 3 times late will result in 1 absence.

Characteristics of Class / Division in Learning

<input type="checkbox"/> Active Learning	<input type="checkbox"/> Aided by ICT	<input checked="" type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
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E l e c t i v e s u b j e c t s

Course Plan

			Theme	Goals
2nd Semester	3rd Quarter	1st	Guidance, outline of electrical equipment	
		2nd	Basic principles of electrical equipment design	
		3rd	Transformer design	
		4th	Optimal design of high voltage thyristor transducer	
		5th	Reliability of electrical and electronic equipment [Theory of failure distribution and reliability]	
		6th	Reliability of electrical and electronic equipment [Reliability analysis method]	
		7th	Energy and sensors	
		8th	Health / longevity and sensors	
	4th Quarter	9th	Safety and sensor	
		10th	Robots and sensors	
		11th	UI and sensor	
		12th	Autonomous driving and sensors	
		13th	Smart factories and sensors	
		14th	Smart agriculture and sensors	
		15th	Marine development and sensors	
		16th		

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Report	Total
Subtotal	0	40	0	30	0	30	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	40	0	30	0	30	100
Cross Area Proficiency	0	0	0	0	0	0	0