

Akashi College		Year	2023	Course Title	Introduction to Computer Engineering
Course Information					
Course Code	5328		Course Category	Specialized / Compulsory	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Electrical and Computer Engineering		Student Grade	3rd	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials					
Instructor	TSUCHIDA Takayuki				
Course Objectives					
<p>1) Understand the concept of protocol layering in information and communication networks. Understand basic and standard technologies and can put them into practice.</p> <p>2) Understand threats people encounter in engineering and daily activities specific to the information society and the countermeasures against them.</p>					
Rubric					
	Ideal Level	Standard Level		Unacceptable Level	
Achievement 1	Fully understand the concept of hierarchy, and practice basic and standard techniques regarding the communication networks.	Understand the concept of hierarchy, and practice basic and standard techniques regarding the communication networks.		Cannot understand the concept of hierarchy, and practice basic and standard techniques regarding the communication networks.	
Achievement 2	Fully understand the concept of digital images, fully understand basic image processing technology, and practice it.	Understand the concept of digital images, understand basic image processing technology, and practice it.		Cannot understand the concept of digital images, cannot understand basic image processing technology, and practice it.	
Assigned Department Objectives					
Teaching Method					
Outline	Lectures will be given on networks and security, which are important positions in information engineering among various fields of information engineering. The lectures will be conducted by a teacher who engaged in the research and development of middleware (database) at Hitachi, Ltd. Research & Development Headquarters for five years.				
Style	Classes will be held in a lecture style. Exercises will be given to deepen understanding.				
Notice	This course will provide the basics of advanced information-based subjects, therefore students must work it on actively. This course's content will amount to 90 hours of study in total. These hours include the learning time guaranteed in classes and the standard self-study time required for pre-study / review. Students who miss 1/3 or more of classes will not be eligible for a passing grade.				
Characteristics of Class / Division in Learning					
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class	
<input checked="" type="checkbox"/> Instructor Professionally Experienced					
Course Plan					
			Theme	Goals	
2nd Semester	3rd Quarter	1st	Class guidance, Internet history, OSI Basic Reference Model and TCP/IP	Can explain the OSI Basic Reference Model.	
		2nd	Network Interface Layer (Data Link), and LAN	Can explain the Network Interface Layer (Data Link), and LAN	
		3rd	Internet Layer (Network), and IPv4/v6	Can explain the Internet Layer (Network), and IPv4/v6	
		4th	L3 Routing	Can explain the L3 Routing	
		5th	L4 Transport Layer, and TCP/UDP	Can explain the L4 Transport Layer, and TCP/UDP	
		6th	L7 Application Layer	Can explain the L7 Application Layer	
		7th	Explanation of the midterm exam, information security(concept)	Can explain the concept of information security. Can explain the major threats to information security.	
		8th	Midterm exam.	Midterm exam.	
	4th Quarter	9th	Cryptography (1)	Can explain the history of cryptography and current ciphers.	
		10th	Cryptography (2)	Can explain digital signatures, PKI, SSL, etc. as applications using cryptography and hash functions.	
		11th	Deep learning(1)	Can explain the basic concept of deep learning.	
		12th	Deep learning(2)	Can explain the concept of deep learning.	
		13th	Deep learning(3)	Learn about implementing deep learning through the use of sample codes	
		14th	Machine learning(1)	Can explain the basic concept of machine learning.	
		15th	Machine learning(2)	Can explain the concept of machine learning.	
		16th	Final exam.	Final exam.	
Evaluation Method and Weight (%)					

	Examination	Little test	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	20	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	80	0	0	0	20	0	100
Cross Area Proficiency	0	0	0	0	0	0	0