

Tsuyama College		Year	2022	Course Title	Advanced Information Networks
Course Information					
Course Code	0089		Course Category	Specialized / Elective	
Class Format	Lecture		Credits	Academic Credit: 2	
Department	Department of Integrated Science and Technology Communication and Informations System Program		Student Grade	4th	
Term	Second Semester		Classes per Week	2	
Textbook and/or Teaching Materials	Textbook :ODAKA Tomohiro et al. "TCP/IP Sockets in C Practical Guide for Programmers(Japanese)"(Ohmsha)				
Instructor	ONISHI Atsushi				
Course Objectives					
Learning purposes : Learning how to program the communication software using SOCKET. Learning how to build a server on the cloud.					
Course objectives : 1. To learn how to program the communication software using SOCKET 2. To learn how to build a server on the cloud					
Rubric					
	Excellent	Good	Acceptable	Not acceptable	
Achievement 1	The student understands all topics about SOCKET programming in this class.	The student understands 80% of topics about SOCKET programming in this class.	The student understands 60% of topics about SOCKET programming in this class.	The student understands less 60% of topics about SOCKET programming in this class.	
Achievement 2	The student submitted the report about how to build a server on the cloud within the deadline.	The student submitted the report about how to build a server on the cloud after the deadline, but the student studied voluntarily.	The student studied about how to build a server on the cloud under the teaching.	The student did not submit the report about how to build a server on the cloud.	
Assigned Department Objectives					
Teaching Method					
Outline	<p>General or Specialized : Specialized</p> <p>Field of learning : Information System, programming, network</p> <p>Foundational academic disciplines : Information Science, Computer Engineering and related fields / Computer network-related</p> <p>Relationship with Educational Objectives : This class is equivalent to "(3) Acquire deep fundation knowledge of the major subject area".</p> <p>Course outline : The student can learn how to program the communication software using SOCKET. And the student can learn how to build a server on the cloud.</p>				
Style	<p>Course method : The class explains the topics of SOCKET programming and server on the cloud using materials. Exercises will be given as much as possible. Some explanations that are not in textbook will based on handouts.</p> <p>Grade evaluation method : Exams(60%) + Reports(40%). Examinations will be conducted a total of 2 times, and the evaluation rasios will be the same. The teacher does not admit the carry-on of the materials in the examination. The teacher does not carry out the reexamination without defects in the regular examination.</p>				
Notice	<p>Precautions on the enrollment : Students must take this class (no more than one-third of the required number of class hours missed) and earn the credit in order to complete the 4th year course. 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.</p> <p>Course advice : The students should review all topics earnestly. As a preparatory study, the students are required to review the contents of basic information networks.</p> <p>Foundational subjects : Information Literacy(1st year), Basic Information Networks(2nd), Introduction to Computers(3rd) Related subjects : Network Security(4th), Communication Engineering(4th), Communications Protocol(5th)</p> <p>Attendance advice : If you are late for the role call, you will be treated as a latecomer. The teacher considers that ths student was absent once when late twice. The student should not be late for the class so that the student can receive materials surely.</p>				
Characteristics of Class / Division in Learning					
<input type="checkbox"/> Active Learning		<input type="checkbox"/> Aided by ICT		<input type="checkbox"/> Applicable to Remote Class	
				<input type="checkbox"/> Instructor Professionally Experienced	
E l e c t i v e m u s t c o m p l e t e s u b j e c t s					
Course Plan					
		Theme	Goals		

2nd Semester	3rd Quarter	1st	Guidance	Getting ready to attend the class
		2nd	Abstract about computer network and communication protocols	Understanding about computer network and communication protocols. Explain the methods of development of applications using computer networks.
		3rd	Basic topics about SOCKET1(creating and scrapping, address designation, TPC client)	Understanding about the creating and scrapping method of SOCKET. Understanding about the address designation method. Understanding about TCP client. Explain the methods of development of applications using computer networks.
		4th	Basic topics about SOCKET2(TPC server)	Understanding about TCP server. Explain the methods of development of applications using computer networks.
		5th	Creating the message(encoding, byte sequence, lining up and padding, framing and analysis)	Understanding about encoding. Understanding about the lining up and padding method. Understanding about the framing and analyzing method. Explain the methods of development of applications using computer networks.
		6th	UDP SOCKET(UDP client, UDP server, receiving and sending data using UDP SOCKET)	Understanding about UDP client. Understanding about UDP server. Understanding about the receiving and sending method using UDP SOCKET. Explain the methods of development of applications using computer networks.
		7th	SOCKET programming1(options, signal)	Understanding about the SOCKET options. Understanding about signaling. Explain the methods of development of applications using computer networks.
		8th	2nd semester mid-term exam	
	4th Quarter	9th	Return and commentary of exam answers	
		10th	SOCKET programming2(nonblocking I/O)	Understanding about nonblocking I/O. Explain the methods of development of applications using computer networks.
		11th	SOCKET programming3(multitask)	Understanding about multitask. Explain the methods of development of applications using computer networks.
		12th	SOCKET programming4(multiplexing, broadcast)	Understanding about multiplexing. Understanding about broadcast. Explain the methods of development of applications using computer networks.
		13th	SOCKET programming5(multicast, comparison between broadcast and multicast)	Understanding about multicast. Understandign about the difference between broadcast and multicast. Explain the methods of development of applications using computer networks.
		14th	Summary, supplementary about the server configuration method on the cloud	Explain the major server configuration methods.
		15th	(2nd semester final exam)	
		16th	Return and commentary of exam answers	

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Report	Other	Total
Subtotal	60	0	0	0	40	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	60	0	0	0	40	0	100
Cross Area Proficiency	0	0	0	0	0	0	0