

Course Title	Introduction to System Engineering	
Registration Code	L100100001	
Number of Credits	2	
Years of Eligible Graduate Students	1-2	
Semester	1st	
Period	Thursday 5th (90 minutes from 16:20)	
Room	B115 (Sugimoto Campus, CPU) A6-332 (Nakamozu Campus, OPU)	
Instructors	Shingo Ata and Hideki Tode, and others	
Office hours	17:00-18:00 of Wednesday (need appointment)	
Goals of the course	<p>The practical use of information systems and the knowledge about discipline to acquire are essential for the students who have foundation of material science to acquire the way of system-scientific thinking.</p> <p>In this class, we aim to:</p> <ul style="list-style-type: none"> <li>understand how the information and communication systems are developed and realized, and learn the structure and mechanism; and</li> <li>understand and acquire the outline of the basic academic field necessary for fusing systematic ideas to material science ideas by consider the roll of the material object.</li> </ul>	
Textbooks	none	
Books of reference		
Allied subject		
Homework (Preparing for the classwork)		
Course outline	<p>Learn the basis and practical use of system science necessary for those who have completed the undergraduate course of material science to learn programs of system science. In the first half, we lecture about the basic theories essential to compose information communication systems and learn about the basis of information systems. Then, we explain about information processing and network systems. In the latter half, we explain about practical examples of integrated systems of information/communication and lecture on the basis of various fields of study necessary for actual information systems plainly for participants who have learned the basis of material science.</p>	
Class schedule	1st Information systems basic theory (1) (Signal processing)	4/12
	2nd Information systems basic theory (2) (Probabilistic reasoning)	4/19
	3rd Information systems basic theory (3) (Optimization)	4/26
	4th Information systems basic theory (4) (Cluster analysis)	5/10
	5th Information systems basic theory (5) (Machine learning)	5/17
	6th Information processing systems (1): Image recognition and processing	5/24
	7th Information processing systems (2): Object-orientation and software system	5/31
	8th Information processing systems (3): Artificial intelligence and control	6/7
	9th Network systems (1): Modeling of communication systems	6/14
	10th Network systems (2): Traffic control	6/21
	11th Network systems (3): Next generation network systems	6/28
	12th Application example (1): Medical health care wireless systems	7/5
	13th Application example (2): Medical/nursing information systems	7/12
	14th Application example (3): Autonomous robot systems	7/19
	15th Application example (4): Human Interface	7/26
	Optional extra day	
Evaluation	<p>Synthetically evaluated by the report shown at each class and exam. But, the students with absence of six or more shall not be evaluated.</p>	