

Course Title	Introduction to Communication Systems	
Registration Code	L100150001	
Number of Credits	2	
Years of Eligible Graduate Students	1-2	
Semester	1st	1st
Period	Tue. 2nd (only for OPU students)	Mon. 4th (only for CPU students)
Room	B4-WK-401	F611
Instructors	Hideki Tode	Shingo Ata & Shinsuke Hara
Office hours	Room 303, 3rd floor, Bldg. B4 Wed. 17:00-18:00, need appointment	
Contact	tode@cs.osakafu-u.ac.jp	
Goals of the course	<p>1. Acquiring knowledge on information network infrastructure and various control methods as its elemental technologies, and understanding their essential significance and purposes.</p> <p>2. Understanding specified technologies; LAN, routers/switches, active queue management, routing, multicasting, transport protocols, and several network application systems.</p> <p>3. In particular, students can explain, in detail, the following technical terms;</p> <ul style="list-style-type: none"> - Ethernet/LAN --CSMA/CD --IEEE802.11 DCF, CSMA/CA - Active Queue Management --Weighted Fair Queueing -- Random Early Detection - Routing --Distance Vector & Link State --RIP (Distance Vector Type) --OSPF (Link State Type) - TCP --Cumulative ACK --Flow control - --Slow Start Phase / Congestion Avoidance Phase --Detection of Packet Loss --Fast Retransmit / Fast Recovery - Mobile Multimedia --Cross Layer Optimization --802.11e --What is QoS (Quality of Service) Control? - P2P --Structured & Unstructured --Distributed Hash Table --Chord --BitTorrent 	
Textbooks	Printed materials will be distributed.	
Books of reference	Computer Networks, Andrew S. Tanenbaum, Prentice Hall	
Allied subject		
Homework (Preparing for the	Please read the text distributed in advance via the announced URL, and review the key words.	
Course outline	<p>1. Overview of information systems, 2. Protocol hierarchy, 3. LAN, 4. Router/Switch structures, 5. Active queue management, 6. Routing control, 7. Multicasting technology, 8. Transport protocols (TCP), 9. MPLS networks, 10. Optical networking technology, 11. Streaming technology, 12. QoS control for mobile multimedia, 13. P2P networks, 14. Wireless multi-hop networks,</p>	
Class schedule	1st Overview of information systems	
	2nd Protocol hierarchy	
	3rd LAN	
	4th Router/Switch structures	
	5th Active queue management	
	6th Routing control	
	7th Multicasting technology	
	8th Transport protocols (TCP)	

	9th MPLS networks
	10th Optical networking technology
	11th Streaming technology
	12th QoS control for mobile multimedia
	13th P2P networks
	14th Wireless multi-hop networks
	15th Future perspective
Evaluation	Evaluation will be based on a final written test (80%) and research reports (one special report)(20%). Everytime, daily in-class mini-report is given for understanding check. If the daily reports were not submitted properly more than 5 times, there would be no right to take the final writing test.
Remarks	<ul style="list-style-type: none"> - This lecture is done in Japanese, but lecture materials are written in English. - How to get the Text: From my Homepage as follows: http://www.cs.osakafu-u.ac.jp/~tode/Lecture/Lecture-info.html Updated until one day before
URL Link	<<Lecture Note>> http://www.cs.osakafu-u.ac.jp/~tode/Lecture/Lecture-info.html