Course Syllabus  
Jump to Today  
2018 FALL CSCD 330 Network Programming  
Class Meet: 1200-1250 (daily)  
Instructor: Imamura CEB 308Office Hour: 1300-1350Textbook:Canvas -> Files -> textbook -> textbookOnline Network Resources:<http://www.csd.uoc.gr/~hy556/material/tutorials/cs556-3rd-tutorial.pdf> (Links to an external site.)  
<http://csperkins.org/teaching/ns3/labs-intro.pdf> (Links to an external site.)  
<http://beej.us/guide/bgnet/output/print/bgnet_USLetter.pdf> (Links to an external site.)<http://msdn2.microsoft.com/en-us/library/ms810606.aspx> (Links to an external site.)  
<http://www.garykessler.net/library/tcpip.html> (Links to an external site.)  
<http://www.ssfnet.org/Exchange/tcp/tcpTutorialNotes.html> (Links to an external site.)  
<http://www.linuxhomenetworking.com/wiki/index.php/Quick_HOWTO_:_Ch02_:_Introduction_to_Networking#DHCP> (Links to an external site.)  
<http://www.tutorialsweb.com/networking/tcp-ip/index.htm> (Links to an external site.)Online Network Programming related Resources:\* <http://beej.us/guide/bgnet/> (Links to an external site.)  
<http://jan.netcomp.monash.edu.au/ClientServer/old/socket.html> (Links to an external site.)  
<http://publib.boulder.ibm.com/iseries/v5r2/ic2924/info/rzab6/rzab6mst.pdf#search=%22socket%20programming%22> (Links to an external site.)  
<http://www.cs.rpi.edu/courses/sysprog/sockets/sock.html> (Links to an external site.)  
<http://www.coding-zone.co.uk/cpp/articles/140101networkprogramming.shtml> (Links to an external site.)  
<http://gnosis.cx/publish/programming/sockets.html> (Links to an external site.)  
<http://www-net.cs.umass.edu/ntu_socket/> (Links to an external site.)  
<http://www.scit.wlv.ac.uk/~jphb/comms/sockets.example.html> (Links to an external site.)  
<http://www-net.cs.umass.edu/ntu_socket/> (Links to an external site.)Objective: To learn network programming and underlying network structures. Topics include Network Architectures, Protocols, Routing, and Network Programming.Prerequisites: Data Structures and APEProgramming Lab and Tests:There will be programming assignments (lab) and tests. Tests include in-class programming exam, take-home tests, and in-class tests. Lab is done in group of two or three students. Usually one works on server program and the other on client program.Grading criteriaYou must demonstrate program run. Only after successful demonstration and approval, you will turn it in to digital drop-box.93% up 4.0  
… …  
83% 3.0  
… …  
73% 2.0Academic Integrity  
Read on student's responsibility Topics (subject to change depend on course progress).The Internet  
Protocol Hierarchies  
Design Issues for the Layers  
Connection-Oriented and Connectionless Services  
Service Primitives  
TCP/IP Reference Model  
Ethernet  
The Transport Services  
Services Provided to the Upper Layers  
Transport Service Primitives  
Berkeley Sockets  
Socket Programming  
Ethernet MAC Sublayer Protocol  
Data Link Layer Switching  
Repeaters, Hubs, Bridges, Switches, Routers, and Gateways  
Network Layer in The Internet  
IP Protocol  
Connection Establishment  
Connection Release  
IP Address  
Internet Control Protocols  
Route Table  
ARP Table  
DNS, WWW, HTTP  
Thread Programming  
I/O Multiplexing  
Flow Control and Buffering  
Exponential Backoff  
Sliding Window  
Congestion Control Algorithms very lightly covered.  
UDP  
Server with multiplexing, client with threading.Routing Algorithms  
RIP and count to infinity, the rest covered very lightlyLecture schedule and notes:1 IP address2 Socket programming3. Thread programming for duplex9 IO multiplexing (select)web server/client4 IP packet Routing5 Subnet6 Route Table Construction7 CRC8 Bellman-Ford10 OSPF11 Congestion Control12 Packet Length14 DNS