

CSE4/586		Distributed Systems	Spring 2007	
Date (week)	Topic	Chapters	Demo	
	Preliminary Reading: Ch. 6: Operating systems fundamentals; Ch. 7: Security: PKI cryptography; digital signatures;	6, 7		
15-Jan	What is a distributed system? Examples. Resource sharing on the web; Internet, intranet, mobile, wireless, ubiquitous systems; Web services; Requirements;	1	Simple Client/server	
22-Jan	System models: architectural model; functional models: interaction model, security model, failure model;	2		
29-Jan	Networking and internetworking: switching, protocols, routing, congestion control, Inpv4, Ipv6, tunneling, IP addressing, mobile IP, Firewalls, VPN; case studies: ethernet, WiFi, Bluetooth and ATM	3		
5-Feb	API for internetworking: socket API, external data representation and marshalling, XML, remote object reference, request-response, group communication, IP multicast.	4	Internetwork Java API	
12-Feb	Distributed objects and remote invocation: RPC, Event-driven systems, notifications, synchronous and asynchronous systems; middleware; Jini; Mobile object architecture (Patrone)	5	Java RMI, MOA	
19-Feb	Web services: service descriptions, discovery, XML, SOAP, XML security, coordination of web services; grid computing and globus	19	WS	
26-Feb	Security in distributed systems: cryptography pragmatics; Needham-Schroder, Kerberos, 802.11 Wifi	7.5, 7.6		
5-Mar	Distributed file system: Sun Network file systems: issues, caching, vnode; modern concepts: hibernate	8.2, 8.3		
12-Mar	Spring Break			
19-Mar	Name services and domain name system; directory services	9		
26-Mar	Peer-to-peer systems: napster, p2p middleware; case studies: freenet, gnutella, Kazaa, Bittorrent; Ivy, Squirrel	10	P2P	
2-Apr	Clocks, time, global states, and events; synchronizing physical clocks, global positioning system (GPS);	11		
9-Apr	Coordination and agreement: multicast and related problems; consensus and related problems; epidemic model;	12		
16-Apr	Mobile and ubiquitous computing: association, interoperation, sensing, context awareness, location dependency, concepts of space and place, adaptation of content.	16		
23-Apr	More on Web services WS-standard specifications; grid computing	Notes		
26-Apr	Review for final exam			
	Other items for lectures and recitations			
	Project 1 discussion			
	Project 2 discussion			
	Project 3 discussion			
	Quiz 1			
	Quiz 2			