朝陽科技大學 094學年度第1學期教學大綱
Computer Networks 電腦網路

當期課號	2292	Course Number	2292
授課教師	范揚文	Instructor	FAN,YANG WEN
中文課名	電腦網路	Course Name	Computer Networks
開課單位	資訊管理系(二日)三A	Department	
修習別	必修	Required/Elective	Required
學分數	3	Credits	3
課程目標	在這個課程中，我們將學習電腦網路及網際網路如何運作。 主要分成四個部份來討論: 1. 資料傳輸，介紹硬體層的運作。 2. 封包傳輸，討論封包如何交換。 3. 網路連接，說明網際網路的架構與定址及其協定等。 4. 網路應用，解釋網路應用程式的運作。	Objectives	1. Computer networks terminology & Communication basics 2. Networking and network technologies: Packet switching, framing, Local and wide area technologies, Networking addressing, Connection and extension, Measures of delay and throughput, Protocol layers 3. Internets and Internetworking: Internet Protocol (IP) datagram format and addressing, Internet routers and routing, Address binding (ARP), User datagram protocol (UDP), Transmission control protocol (TCP) 4. Network applications: Domain name system (DNS), File transfer protocol (FTP), E-mail transfer (SMTP, POP3), Web technologies and protocol (HTTP, CGI) .
教材	Computer Networks and Internets with Internet Applications, 4/e by Douglas E Comer, Ralph E. Droms Douglas Comer. Computer Networks and Internets. (中譯本：鄭王駿、鄧姚文（2001）。電腦與網際網路。台北：全華)。	Teaching Materials	
成績評量方式	20% Homeworks & In-class Response 40% Mid Term Exam. 40% Final Exam.	Grading	20% Homeworks & In-class Response 40% Mid Term Exam. 40% Final Exam.
教師網頁			
	Table of Contents I. USING AND BUILDING INTERNET APPLICATIONS. 1. Introduction. 2. Motivation and Tools. 3. Network Programming and Applications. II. DATA TRANSMISSION. 4. Transmission Media. 5. Local Asynchronous Communication RS-232. 6. Long-Distance Communication Carriers, Modulation, and Modems. III. PACKET TRANSMISSION. 7. Packets, Frames, and Error Detection. 8. LAN Technologies and Network Topology. 9. Hardware Addressing and Frame Type Identification. 10. LAN Wiring, Physical Topology,		Table of Contents I. USING AND BUILDING INTERNET APPLICATIONS. 1. Introduction. 2. Motivation and Tools. 3. Network Programming and Applications. II. DATA TRANSMISSION. 4. Transmission Media. 5. Local Asynchronous Communication RS-232. 6. Long-Distance Communication Carriers, Modulation, and Modems. III. PACKET TRANSMISSION. 7. Packets, Frames, and Error Detection. 8. LAN Technologies and Network Topology. 9. Hardware Addressing and Frame Type Identification. 10. LAN Wiring, Physical Topology,

教學內容	and Interface Hardware. 11. Extending LANs: Fiber Modems, Repeaters, Bridges, and Switches. 12. Long-Distance and Local Loop Digital Connection Technologies. 13. WAN Technologies and Routing. 14. Connection-Oriented Networking and ATM. 15. Network Characteristics: Ownership, Service Paradigm, and Performance. 16. Protocols and Layering. IV. INTERNETWORKING. 17. Internetworking: Concepts, Architecture, and Protocols. 18. IP: Internet Protocol Addresses. 19. Binding Protocol Addresses ARP. 20. IP Datagrams and Datagram Forwarding. 21. IP Encapsulation, Fragmentation, and Reassembly. 22. The Future IP IPv6. 23. An Error Reporting Mechanism (CMP). 24. UDP: Datagram Transport Service. 25. TCP: Reliable Transport Service. 26. Network Address Translation. 27. Internet Routing. V. NETWORK APPLICATIONS. 28. Client-Server Interaction. 29. The Socket Interface. 30. Example of a Client and a Server. 31. Naming with the Domain Name System. 32. Electronic Mail Representation and Transfer. 33. IP Telephony VoIP. 34. File Transfer and Remote File Access. 35. World Wide Web Pages and Browsing.	**Syllabus**	and Interface Hardware. 11. Extending LANs: Fiber Modems, Repeaters, Bridges, and Switches. 12. Long-Distance and Local Loop Digital Connection Technologies. 13. WAN Technologies and Routing. 14. Connection-Oriented Networking and ATM. 15. Network Characteristics: Ownership, Service Paradigm, and Performance. 16. Protocols and Layering. IV. INTERNETWORKING. 17. Internetworking: Concepts, Architecture, and Protocols. 18. IP: Internet Protocol Addresses. 19. Binding Protocol Addresses ARP. 20. IP Datagrams and Datagram Forwarding. 21. IP Encapsulation, Fragmentation, and Reassembly. 22. The Future IP IPv6. 23. An Error Reporting Mechanism (CMP). 24. UDP: Datagram Transport Service. 25. TCP: Reliable Transport Service. 26. Network Address Translation. 27. Internet Routing. V. NETWORK APPLICATIONS. 28. Client-Server Interaction. 29. The Socket Interface. 30. Example of a Client and a Server. 31. Naming with the Domain Name System. 32. Electronic Mail Representation and Transfer. 33. IP Telephony VoIP. 34. File Transfer and Remote File Access. 35. World Wide Web Pages and Browsing.

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