



**Department of Information System
Engineering**

Ecole Polytechnic University

Subject: Network Management

Course Book – *Fourth Year/ 8th Semester*

Theory: A.Prof.'s Dr. Reben MS KURDA

Practical: A.Prof.'s Dr.Reben MS KURDA

Ms.Media Ali Ibrahim

Mr.Hasan Abduljabbar Saeed

Academic Year: 2022/2023

Course Book

1. Course name	Network Management
2. Lecturer in Charge	A.Prof. Dr.Reben KURDA Mr. Hasan Abduljabbar Saeed
3. Department/ College	ISE Department / Erbil Technical Engineering-/Erbil Polytechnic University Institute
4. Contact	e-mail: reben.kurda@epu.edu.iq e-mail : hasan.saeed@epu.edu.iq Tel: 0750 3699727
5. Time (in hours) per week	Theory: 2 Hrs, Hall 1 (Monday) Practical: 2 Hrs (Wednesday)
6. Office hours	Tuesday From 10:30 AM To 01:00 PM Thursday From 08:30 AM To 01:00 PM
7. Course code	NEM804
8. Teacher's academic profile	Reben KURDA is an A.Prof. Holding PhD. in Computer Science in University Paris-Sud, Paris-France 2015. He started his academic teaching in 2009 when he joined the work at Koya University as an Assistant Lecturer in the department of Software Engineering. Since November 2019, he is joined his academic teaching at Department Information System Engineering, college Technical Engineering, Ecole Polytechnic University. Reben KURDA participated in CCNA Academy courses, he got instructor certificate from Cisco. He teaches several courses like C++, Java, Object oriented programming, Data Structure, Logic, Data Communication, Computer Networking.
9. Keywords	Layer 3 IPv4 Services & Routing Chapter 1 - Implementing IPv4 Working with Cisco Routers Ch 15 Configuring IPv4 Addresses and Static Routes Ch 16 Using Dynamic Routing Protocols Ch 16 Configuring IPv4 Hosts Ch 16 Chapter 2 - Configuring IPv4 Routing Protocols Understanding OSPF Ch 19 Implementing OSPF Ch 20 Chapter 3 - Wireless LANs Wireless Network Fundamentals Ch 26 Cisco Wireless Architectures Securing Wireless Networks

	Building a Wireless LAN Chapter 4 IP Services Quality of Service (QoS) Ch 11 Volume 2 Miscellaneous IP Services Ch 12 Volume 2
<p>10. Course overview:</p> <p>This course covers various topics in computer networks. It includes protocols that govern way communication takes place on the network management, the parameters for routing and network analysis and dissemination strategies in the static and dynamic networks. The IPv4 services, configuring IPv4 routing protocols, implementing, Understanding and Implementing OSPF, and wireless LANs, Miscellaneous IP Services and QoS.</p>	
<p>11. Course objective:</p> <ul style="list-style-type: none"> ▪ Analyze the issues and challenges pertaining to management of emerging network technologies such as wired/wireless networks and high-speed internets. ▪ Apply network management standards to manage practical networks ▪ Formulate possible approaches for managing OSI network model. ▪ Use on SNMP for managing the network ▪ Use RMON for monitoring the behavior of the network ▪ Identify the various components of network and formulate the scheme for managing them 	
<p>12. Student's obligation</p> <p>It is the teacher's job to formulate a classroom management plan to facilitate the development of an effective learning environment. The student also has an obligation in the development of a quality learning environment. Following individual rules or expectations is just the beginning. In addition to complying with posted rules, students should be expected to show respect for self and others and meet all behavioural and academic expectations.</p>	
<p>13. Forms of teaching:</p> <p>Forms of teaching is on two phase</p> <ul style="list-style-type: none"> ✓ In the beginning give the students theory lecture by using data show and White Board. ✓ Direct the students to labs in order to apply the commands and what they took in the theory on computer supervising by the teacher itself with his assistant. 	
<p>14. Assessment scheme</p> <ul style="list-style-type: none"> • Mid-term Exam 40 % <ul style="list-style-type: none"> ◦ Lab Exams. 10% ◦ Theoretical Exam 15% 	

<ul style="list-style-type: none"> ◦ Quiz 5% ◦ Attendance 5% ◦ Activities 5% • Final Exam 60% <ul style="list-style-type: none"> ◦ Practical 20% ◦ Theoretical 40% 	
<p>15. Student learning outcome:</p> <p>At the completion of this course, students should be able to explain</p>	
<p>16. Course Reading List and References:</p> <p>Required Textbook: Computer Networking: CCNA 200-301 Official Cert Guide, Volume 1 & 2, WENDELL ODOM, CCIE No. 1624 Emeritus (ISBN: 9780135792735).</p>	
<p>17. The Topics:</p>	<p>Lecturer's name</p>
<p>Volume 1 Part III: IP Services (Weeks)</p> <p>■ Part V: IPv4 Routing</p> <ul style="list-style-type: none"> ❖ Chapter 15, "Operating Cisco Routers," is like Chapter 8, focusing on basic device management, but it focuses on routers instead of switches. ❖ Chapter 16, "Configuring IPv4 Addressing and Static Routes," discusses how to add IPv4 address configuration to router interfaces and how to configure static IPv4 routes. <p>■ Part VI: OSPF</p> <ul style="list-style-type: none"> ❖ Chapter 19, "Understanding OSPF Concepts," introduces the fundamental operation of the Open Shortest Path First (OSPF) protocol, focusing on link state fundamentals, neighbour relationships, flooding link state data, and calculating route based on the lowest cost metric. ❖ Chapter 20, "Implementing OSPF," takes the concepts discussed in the previous chapter and shows how to configure and verify those same features. ❖ Chapter 21, "OSPF Network Types and Neighbours," takes the next steps in OSPF configuration and verification by looking in more depth at the concepts of how routers enable OSPF on interfaces, and the conditions that must be true before two routers will succeed in becoming OSPF neighbours <p>■ Part VIII: Wireless LANs</p> <ul style="list-style-type: none"> ❖ Chapter 26, "Fundamentals of Wireless Networks" Explain the role and function of network components. Access Points. Describe wireless principles. a Nonoverlapping Wi-Fi channels. SSID. RF <p>Volume 2 Part III: IP Services</p> <ul style="list-style-type: none"> ❖ Chapter 11, "Quality of Service (QoS)," discusses a wide variety of concepts all related to the broad topic of QoS. ❖ Chapter 12, "Miscellaneous IP Services," discusses several topics for which the exam requires conceptual knowledge but no configuration knowledge, including FHRPs (including HSRP), SNMP, TFTP, and FTP. <p>Implementing Simple Network Management Protocol This section includes details of how to implement SNMPv2c and SNMPv3.</p>	<p>Reben M.S KURDA</p> <p>(4 hrs) for each of them per week</p>
<p>18. Practical Topics (If there is any)</p>	
<p>1. Example of OSPF</p>	<p>Reben M.S KURDA</p>

<ol style="list-style-type: none">2. IP Routing in the LAN3. OSPF4. Wireless LAN5. QoS6. FHRPs (including HSRP), SNMP, TFTP, and FTP7. SNMPV28. SNMPV3	(3 hrs) for each of the Group per week
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19. Examinations:

Samples of Questions

Q1\ What is computer and figure out its main components.

20. Extra notes:

21. Peer review

پیداچونہوہی ھاوہل

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

ئەم كۆرسىبووكە دەبىت لەلایەن ھاوھلېكى ئەكادېمىيە سەير بىكرىت و ناوھرۆكى بابەتەكانى كۆرسەكە پەسەند بىكات و جەند وشەيەك بنوسىت لەسەر شىاوى ناوھرۆكى كۆرسەكە و واژووى لەسەر بىكات.

ھاوھل ئەو كەسەيە كە زانىارى ھەبىت لەسەر كۆرسەكە و دەبىت پلەى زانستى لە مامۇستا كەمتر نەبىت.