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**Department of Computer Science**

**College of Science**

**University of Salahaddin**

**Subject: Network Fundamentals**

**Course Book –Year 3**

**Lecturer's Name: Mr. Zanco Asaad Taha**

**Academic Year: 2018/2019**

**Course Book**

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| **1. Course name** | **Network Fundamentals** | |
| **2. Lecturer in charge** | **Mr. Zanco Asaad Taha** | |
| **3. Department/ College** | **Computer Science / Science** | |
| **4. Contact** | **e-mail:zanco-computer@hotmail.com**  **Tel:009647504763912** | |
| **5. Time (in hours) per week** | **Theory: 2**  **Practical: 2** | |
| **6. Office hours** | **2** | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | **Education Process is a complex task however explaining simple of topics is key element to share and collaborate with students.** | |
| **9. Keywords** | **Network , Computer Network , Data communication** | |
| **10. Course overview:**  The principal objective of this course is to provide a thorough introduction to the theory and practice of networking and network systems. During the course student will grasp a firm understanding of computer networking and network protocols, standards, components and security.  Students use the windows 7 OS as a client network device and packet tracer network simulator for applying the concepts taken from the theoretical lecture. | | |
| **11. Course objective:**   * **To clear how data is processed and handled at computer networks.** * **To familiarize student with roles and function of network device and protocols.** * **To be able configure and troubleshooting various networks issues.** | | |
| **12. Student's obligation**  In this section the lecturer shall write the role of students and their obligations throughout the academic year, for example the attendance and completion of all tests, exams, assignments, reports , essays…etc.  **To gain and develop from the course, students are required to attend classes, theory and practical tests. Doing assignments are obligatory.** | | |
| **13. Forms of teaching**  **The Style of teaching is lecture method. To clear topics, PowerPoint, white board and video are used.** | | |
| **14. Assessment scheme**  Breakdown of overall assessment and examination  **Grading**  -Midterm exam degree (50%) is calculated as follows:-  - Theory: 20 marks (2 exams)  - Practice: 30 marks (2 exams)    - Final exam degree (50%) is calculated as follows:  Theory: 50 marks  ‌ | | |
| **15. Student learning outcome:**  پڕکردنه‌وه‌ی ئه‌م خانه‌یه‌ زۆر گرنگه‌، مامۆستا ده‌رئه‌نجامه‌کانی فێربوون ده‌نووسێت. بۆ نموونه‌:ڕوونی ئامانجه‌ سه‌ره‌کیه‌کانی کۆرسه‌که‌ (بابه‌ته‌که‌) بۆ خوێندکار‌  گونجاندنی ناوه‌ڕۆکی کۆرسه‌که‌ به‌ پێویستی ده‌ره‌وه‌ و بازاڕی کار  قوتابی چی نوێ فێرده‌بێت له‌ ڕێگه‌ی پێدانی ئه‌م کۆرسه‌وه‌؟  This should not be less than 100 words | | |
| **16. Course Reading List and References‌:**  ▪Key references: Networking Basics, Patrick Ciccarelli, 2013, 2th edition.  ▪Useful references:  Network+ Guide to Networks, Tamara Dean, 2010, 5th Edition.  Networking Fundamentals, Microsoft Official Academic Course, 2011.  ▪Magazines and review (internet): | | |
| **17. The Topics:** | | **Lecturer's name** |
| In this section the lecturer shall write titles of all topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture  Each term should include not less than 16 weeks  Course Contents  1. Networking Fundamentals  2. Network Standards and Models  3. Network Protocols  4. Network Architectures  5. Network Topologies  6. Network Media and Devices  7. Transmission Control Protocol/Internet Protocol (TCP/IP)  8. Network Servers and Services Fundamentals  9. Enterprise Networking Services  10. Wireless, Remote, and Wide Area Networking  11. Network Security  12. Network Management  13.Cisco Routers and Switches | |  |
| **18. Practical Topics (If there is any)** | |  |
| In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture :  Practical 1 Check Speed, Enable and Disable LAN Card. View and Change Computer Name View Computer’s IP Address.  Practical 2 Configuring & Verifying Static/Dynamic IP Address and APIPA Address.  Practical 3 Network Connectivity Troubleshooting Commands: Ping, Ipconfig, getmac, Arp  Practical 4 Window 7 Network Profile Settings: Network Discovery , File and Printer sharing , Public Folder sharing , Password Protected  Practical 5 Network Sharing: Folder, Driver and Setting Permissions.  Practical 6 Network Sharing: , Mapping a Network Drive , Sharing Printer & Installing Shared Printers , Stop Sharing: Folder, Drive and Printer, Mapped Drive  Practical 7 Introduction to Packet Tracer , Configuring a simple LAN Topology  Practical 8 Cisco IOS: , Introduction to IOS & Navigating IOS Modes , Router’s Configuration: hostname, enable password, Save  Practical 9 Router’s Configuration: VTY Line and LAN Interface Viewing, changing and erasing configuration  Practical 10 Router’s Configuration: WAN Interface.  Practical 11 Static Routing Configuration  Practical 12 RIP Configuration  Practical 13 OSPF Configuration Practical 15 EIGRP Configuration  Practical 14 ACL:Standard Access Control List ,Extended Access Control List  Practical 15 Using CDP Password Recovery Backup and Restore IOS and Configuration  Practical 16 VLAN & Trunking Configuration ,VTP Configuration.  Practical 17 InterVLAN Routing Using Router & Layer 3 Switch  Practical 18 Switch Port Security  Practical 19 IPV6 | |  |
| **19. Examinations:**  Sample of Questions:  Q/ Bold the circle of correct answer:  1- A network that confined to a building is considered as a  O- PAN O- LAN O- MAN O- WAN  2- IEEE 802.3 is a standard for  O- Bluetooth O- Wireless LAN O- Ethernet O- Wireless PAN  Q/ Fill the blanks with the correct word(s):-  1- The …… model was meant to help vendors create interoperable network devices and software.  2- The …………… layer provides reliable and unreliable data delivery.  3- The two type of addresses used on the network are ………...… address and …………. address. | | |
| **20. Extra notes:**  Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks. | | |
| **21. Peer reviewپێداچوونه‌وه‌ی هاوه‌ڵ**  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).*  ئه‌م کۆرسبووکه‌ ده‌بێت له‌لایه‌ن هاوه‌ڵێکی ئه‌کادیمیه‌وه‌ سه‌یر بکرێت و ناوه‌ڕۆکی بابه‌ته‌کانی کۆرسه‌که‌ په‌سه‌ند بکات و جه‌ند ووشه‌یه‌ک بنووسێت له‌سه‌ر شیاوی ناوه‌ڕۆکی کۆرسه‌که و واژووی له‌سه‌ر بکات.  هاوه‌ڵ ئه‌و که‌سه‌یه‌ که‌ زانیاری هه‌بێت له‌سه‌ر کۆرسه‌که‌ و ده‌بیت پله‌ی زانستی له‌ مامۆستا که‌متر نه‌بێت.‌‌ | | |