Department of Software and Informatics

College of Engineering

Salahaddin University

Subject: Network Switching and Routing I

Course Book (Third Year - Spring Semester)

Lecturer's name: Bnar Faisal A. Daham

Academic Year: 2023/2024

Course Book

1. Course name	**Network Switching and Routing I**
2. Lecturer in charge	**Bnar Faisal A. Daham**
3. Department/ College	**Software and Informatics Engineering Department**
4. Contact	bnar.abdulrahman@su.edu.krd
5. Time (in hours) per week	**Theory two hours** **Practical two hours**
6. Office hours	**Office hours are stated in the time table**
7. Course code	**5150**
8. Teacher's academic profile	**Received the B.Sc. and M.Sc. degrees in Software Engineering, Salahaddin University, Erbil, Iraq, in 2006 and 2009, respectively.**
9. Keywords	**Network Devices, Collision Domain, Broadcast Domain, STP, Static Routing, Dynamic Routing, Link-State Algorithm, Distance Vector, Routing Protocols.**

10. Course overview:

This course provides an introduction to network switching and routing after completing the course of network principles which provided an introduction to computer network, understanding how a computer network and how the internet is connected, familiarity with the major components and types of networks, understand the role of network layers, and familiarity with the role of network standards. At the end of this course network switching and routing, students will be able to manage network for a small organization

11. Course objective:

The students in this course will learn the concepts used to acquire the computer networking knowledge as well as the existing connectivity technologies and the required infrastructure which comprises the key steps involved in the communication process.

This course is designed to impart knowledge about basic of Computer Networks, various protocols used in Communication, Managing and configuring Switches and Routers.

12. Student's obligation

Students are obliged to attend within the time for lectures, quizzes, and exams.

13. Forms of teaching

As the subject is covered in the class and the lab, so in the theoretical part data show, pen and board are mostly used to make a frequent step by step communication with the audience, whereas in the lab the students deal with their computers and any explanation or clarification will be done the projectors which is a dynamic tool for such needs.

14. Assessment scheme

50% Quizzes, Assignments, Homework, Midterm Exam, and daily activities.

50% Final exam (30% Theory & 20% Practical)

Note:
- There will be randomly quizzes. Each quiz will be given at the beginning of the class.
- There will be class activities during the lecture for this reason student's attendance is required in all classes.

15. Student learning outcome:

At the end of this course network switching and routing, students will be able to manage network for a small organization

16. Course Reading List and References:

Any new reference related to computer network and Cisco Networking Academy Program, CCNA, 1,2, 3, and 4 could be useful.

17. Topics	**Lecturer's Name**
Week 1: Reviewing Network Principles	M. Bnar Faisal (2 hrs. per week)
Week 2: Networking devices types and differences between switch, hub, bridge, and router	
Week 3: A Simple Switched Network	
Week 4: Spanning Tree Protocol	
Week 5: Routing Concepts	
Week 6: Static and Dynamic Routing	
Week 7: Routing Protocol Operating Fundamentals	
Week 8: Types of Routing Protocols	
Week 9: Distance Vector Routing Protocol Operation	
Week 10: Types of Distance Vector Routing Protocol Operation	
Week 11: Link-State Routing Protocol Operation	
Week 12: Review for final exam	
18. Practical Topics In the practical part Packet Tracer software is used, which is a cross-	M. Bnar Faisal (2 hrs. per week)

platform visual simulation tool designed by Cisco Systems that allows you to create network topologies and imitate modern computer networks. The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface.	
19. Extra notes	
20. Peer review	