Name:	**Date:**
Course/Year/Section:	**Instructor:**
Subject: Professional Elective 3	**Score:**

ACTIVTIES - FINALS

WEEK 11 - Intrusion Detection and Prevention

https://www.youtube.com/watch?v=_gHMkEKGwBM&ab_channel=NGTAcademy

Activity: Case Study Analysis

- **Task:** Search for a real-world case study involving an IDS/IPS failure or success (e.g., a security breach where IDS/IPS played a role).
    - Provide a brief summary of the security incident you are analyzing. What was the nature of the attack, and how did it impact the organization?
    - What type of IDS/IPS system was in place at the time of the attack? Was it network-based (NIDS), host-based (HIDS), or a hybrid approach?
- Write your answer on a separate sheet.

WEEK 12 - Security Through Network Design Elements

https://www.youtube.com/watch?v=zBYYxlgcFhI&ab_channel=SatheeshThreatResearcher

Activity: Network Design Elements

- **Task: List the network design elements** you are familiar with. These can be aspects of network architecture, security measures, or optimization strategies.
- **Write a brief explanation** for each element listed. Your explanation should cover:
    - **What the element is** (a description of the component or concept).
    - **Why it is important** (the role it plays in network design).

WEEK 13 - Common Network Protocols

https://www.youtube.com/watch?v=zXPYA4KqasU&ab_channel=ProfessorMesser

Activity: Protocol Identification and Functionality

Instructions:

1. **Identify and describe the following common network protocols**:
    - Transmission Control Protocol (TCP)
    - Internet Protocol (IP)
    - Hypertext Transfer Protocol (HTTP)
    - Secure Hypertext Transfer Protocol (HTTPS)
    - File Transfer Protocol (FTP)
    - Simple Mail Transfer Protocol (SMTP)
    - Post Office Protocol version 3 (POP3)
    - Domain Name System (DNS)
    - Dynamic Host Configuration Protocol (DHCP)
    - Simple Network Management Protocol (SNMP)
2. **For each protocol:**
    - **What is its primary function** in a network?
    - **What layer of the OSI model** does it operate on?
    - **What are the primary use cases** (e.g., web browsing, email, file transfer)?
    - **What are common ports** associated with the protocol (if applicable)?
3. **Provide an example of how this protocol would be used in a business network. For instance, how does HTTP enable browsing on the company's website?**

WEEK 14 - Network Administration Principles

https://www.youtube.com/watch?v=KJw9EC6ZZuI&list=PL0PGDapljBm3NKdB9H65TDZ2jK-qyxcCg&ab_channel=ProfessorMesser

Activity: Network Administration Principles

1. **Strong security measures to protect the network**
    a. What are the top five security threats to a business network, and how can you mitigate them?
    b. How does the implementation of a firewall help protect a network from external threats?
2. **Network redesign that addresses scalability, performance, and security**
    a. What considerations must be taken into account when redesigning a network to scale as a company grows?
    b. How would you approach creating a network design that balances performance and security?

WEEK 15 - Virtualization and Cloud Computing

https://www.youtube.com/watch?v=_pPlanX5wQY&ab_channel=Intellipaat

Activity:

1. Explain the main difference between virtualization and cloud computing.
2. Describe one major advantage of using virtualization in an IT environment.
3. What is Infrastructure as a Service (IaaS), and provide one real-world example of an IaaS provider.
4. In what ways does cloud computing benefit businesses today? Mention at least two advantages.