

## **Computer Network and communication**

### **1.2P**

#### 1. Module Summary

- **Main Concept**  
An overview of the communication protocols that facilitate the exchange of data between network devices. An in-depth analysis of the TCP/IP model's five layers: Application, Transport, Network, Data-Link, and Physical.
- **Practical network Analysis**  
Play a role-playing exercise that shows how the various TCP/IP model levels interact with one another during communication. An analysis of a browser's resource requests using YouTube serves as a practical example, demonstrating the use of the HTTP/1.1 and H2 protocols. Utilizing network analysis techniques to monitor the total load time and resource load order.
- **Detailed Web page Analysis**  
Examination of the httpforever.com website, with an emphasis on a number of topics, including: utilized protocols (TCP, HTTP, DNS, OCSP). The duration of requests and answers. determining the web server's IP address. utilizing the developer tools in Chrome to confirm comparable data.
- **Important thing**  
The capacity to do useful network analysis and have a thorough comprehension of the TCP/IP paradigm are the two most important learning outcomes. This information is essential for maximizing site performance and guaranteeing effective data transfer.

## Reflection Content

- When considering the Introduction Module, the most important lessons learned were the thorough comprehension of network communication protocols, especially the TCP/IP model, and the useful use of network analysis tools. These abilities are highly transferable to real-world situations and are essential for locating and fixing performance bottlenecks as well as guaranteeing effective web performance.
- With the use of real-world, hands-on network analysis expertise, this session expands on past understanding of fundamental networking concepts. An excellent basis for evaluating and improving web performance has been established by the thorough investigation of tools such as the Network panel in Developer Tools. This skill set is extremely valuable in the IT sector.
- The goal of the course team is very clear: to give students real-world skills that they can use right away in the digital sector. Students can enhance web application performance and become significant assets in their future employment by learning and putting these approaches to use in their studies. This is in line with the industry's need for experts who can guarantee effective online performance and data transmission, improving employability and career advancement.