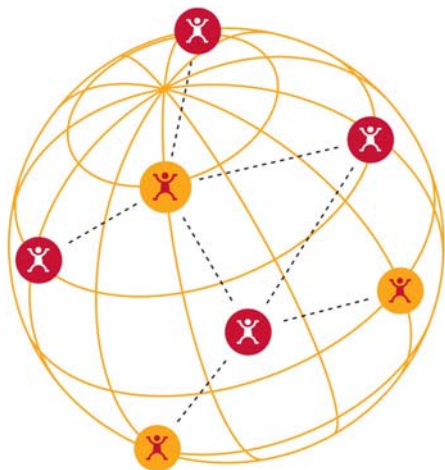


## TRAINING PROGRAM OUTLINE



### ENG-403E TCP/IP APPLICATIONS & SERVICES

#### DESCRIPTION

A 2-day hands-on Training Program to provide participants with an appreciation of the many applications and services utilized over an Internet Protocol (IP) data network. An emphasis will be placed on presenting their architecture and components, as well as message flows.

Through practical hands-on activities, the participant will gain a better understanding of these applications and services.

#### PREREQUISITE

To fully appreciate the contents of this Training Program, the participant should have attended the following Training Program or have acquired the equivalent experience in the subject matter:

- ENG-401E Introduction to Data Networks & TCP/IP



## OBJECTIVES

- Identify the various applications and services which can be utilized over an IP network
- Present the architecture and components of the Web and of a typical e-mail system
- Provide an overview of the characteristics of other end-user applications
- Explain the operation of Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS)
- Explain how to install and configure a DHCP and a DNS server
- Describe TELNET and Secure SHell (SSH)
- Define the main elements of Simple Network Management Protocol (SNMP)
- Present how to analyze network traffic

## TOPICS

- Overview of IP suite applications and services
  - How applications and services fit into the IP suite
  - Client-server model
  - Applications for the end-user's benefit
  - Services to operate and maintain a smoothly running IP network
- Overview of TCP/IP network applications
  - The network application
  - How applications and services fit into the IP suite
  - Network applications components
  - Network applications models
    - Client/server model
    - Peer-to-peer model
  - Network applications and port numbers



- DHCP: the address and parameter provider
  - DHCP service
  - DHCP operation and parameters
  - DHCP configuration and message flow analysis
  - DHCP message format and lease allocation
  
- DNS: the Internet phone book
  - DNS service
  - DNS structure
  - DNS operation and components
  - DNS address resolution
  -
  
- The Web and the HTTP
  - The WWW service and operation
  - HyperText Transfer Protocol (HTTP)
  - HTTP messages and methods
  - HyperText Transport Protocol Secure (HTTPS)
  - Website types
  
- E-mail
  - E-mail service architecture
  - E-mail protocols
    - Post Office Protocol (POP)
    - Internet Message Access Protocol (IMAP)
    - Simple Mail Transfer Protocol (SMTP)
      - SMTP message commands
      - SMTP message structure and account settings
  - E-mail operation
  - E-mail server processes
    - Mail Transfer Agent (MTA)
    - Mail Delivery Agent (MDA)
  - Alternatives for E-mail delivery
  
- File transfer
  - File Transfer Protocol (FTP)
  - Other file transfer techniques



- TELNET and SSH: the remote connectors
  - TELNET service and protocol
  - TELNET commands, operations and options
  - TELNET security issues
  - SSH: a more secure alternative
  - Applications using SSH
  
- SNMP: the network manager
  - SNMP definition, needs and goals
  - SNMP versions
  - SNMP components and environment
  - SNMP messages and Protocol Data Units (PDUs)
  - SNMP operation
  
- Synopsis of other IP applications
  - Instant Messaging (IM)
  - Voice over IP (VoIP)
  - Internet Protocol Television (IPTV)

## TARGET AUDIENCE

- Technical personnel in engineering or operations, with a basic understanding of data networks, interested in or needing to learn about IP network applications and services

## METHODOLOGY

Our Training Programs combine expert presentations, workshops, case studies and discussions on real-life situations faced by participants. Complete training material is provided to all participants for future reference and follow-up action plans.



## LOCATION

Our Training Programs are held at regular intervals in selected cities around the world. Upon request, our expert trainers can lead Training Programs at the location of your choice. If interested, please contact us at [neotelis.training@neotelis.com](mailto:neotelis.training@neotelis.com).

## EXPERTISE

Neotelis provides consulting and training services to organizations worldwide. Its team of experts has trained thousands of individuals in technical, managerial and executive roles, who are working for operators, regulators, policy-makers, governments and private sector corporations in over 100 countries around the world.

