TBS Academy
IT end to end

# Program

## → PHASE 1

### Local Area and Wireless Networking

- Understanding networks using the OSI reference model
- Physical and logical connectivity, networking topologies
- Fundamentals of Ethernet and switching in a local area network
- Fundamentals of Internet Protocol, addressing and higher-level protocols – TCP, UDP, DNS, DHCP
- Fundamentals of Wireless LANs – radio waves, antennas, media access control in wireless networks
- Routing LANs to the Internet, Network Address Translation
- Practical Exercise

### Enterprise Networking Technologies

- Media access control in LANs
- Understanding link aggregation and LACP
- Virtual LANs and trunking
- Routing fundamentals, Internet Protocol and Addressing, Routing protocols, Transport Protocols
- Network redundancy and high availability
- Wide Area Network technologies – AON, GPON, DWDM
- Mobile Networks, 1G-5G and fixed networks
- Understanding and configuring proxy and reverse proxy servers
- Securing Internet access using Next Generation Firewalls
- Enterprise wireless networks – architecture and design concepts
- Understanding authentication and authorization
- Multi-Factor Authentication
- Identity management and directory services using Active Directory Domain Services and Azure AD
- Cryptography basics, certificate authentication and enterprise certificate services
- Practical Exercise

### Extending Enterprise Networks to Remote Workers and to the Cloud

- Understanding the cloud – principles and delivery mechanisms
- Public, Private and Hybrid cloud; comparing IaaS, PaaS and SaaS
- Overview of the Microsoft 365 SaaS platform
- Overview of Microsoft Azure and Azure IaaS services
- Securely connecting branch offices using VPN technologies – IPSec, DMVPN
- Securely connecting remote workers using Remote Access VPN solutions
- Practical Exercise

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## Managing, Securing, Monitoring and Troubleshooting Networks

- Management and monitoring protocols and monitoring objectives
- Understanding SNMP and NMS systems
- Mastering systematic troubleshooting

## Datacenter Networking, Servers, Storages and Virtualization Technologies

- Servers and server components – hardware and software overview
- Storage technologies – storage types, interfaces
- Understanding Redundancy Arrays of Independent Disks (RAID) and levels
- Storage Area Network (SAN) technologies
- Overview of DC networking – concepts, specifics, layers
- Virtualization technologies – VMware ESXi
- Virtualization – the "engine" of the cloud; understanding (the need for) virtualization, hypervisors
- Practical Exercise

## Introduction to Cybersecurity

- Basic Intro
- Cybersecurity
- Advanced Security Operations Center

## Cybersecurity in the Modern Enterprise Environment

- Processes, threats, and tools
- Security Event Management
- Privileged Access Management
- Endpoint Detection and Response
- Practical Exercise

## Software-Defined Networking, Automation and Orchestration

- Understanding software-defined technologies
- Software-defined Access and WAN
- Software-defined DC
- Automation of compute, storage, networking, and backup
- Infrastructure as Code (IaC), cloud native platforms

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## → PHASE 2

**Business Etiquette**

**Company culture and values**

**Personal development**

**Office Productivity tools**

**Automation and Integration tools**

**Vendor-specific technology trainings**

- Networking-related
- Network management-related
- Cybersecurity-related
- Public and Private Cloud-related
- Virtualization-related

**Practical Technical Assignments for teamwork**

- Technical design of a LAN switching topology
- Enterprise solution for secure connectivity between branch offices
- Protecting company resources with firewall technologies
- Design of a server virtualization solution
- Implementing a Network Management System for monitoring
- Building a hybrid IT infrastructure using an IaaS platform

**Personal assignments and presentations**

**On-site visit to one of the largest datacenters in Bulgaria**

**Involvement in real projects**

**Onboarding on to the IT service management processes and systems**

Your gateway
to the full spectrum of IT knowledge.