TBS Academy Program (Detailed)

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
  - Optical technologies
  - Mobile Networks
  - Understanding and configuring proxy and reverse proxy servers
  - Enterprise wireless networks – architecture and design concepts
  - Practical Exercise
- **Introduction to Cybersecurity**
  - Basic Intro
  - What is Cybersecurity

- **Introduction to Cloud Computing**
  - Understanding the cloud – principles and delivery mechanisms
  - Public, Private and Hybrid cloud; comparing IaaS, PaaS and SaaS

- **Introduction to Network and Infrastructure Monitoring**
  - Management and monitoring protocols and monitoring objectives
  - Understanding SNMP and NMS systems
  - Mastering systematic troubleshooting

- **Applying AI tools to engineering tasks**
  - AI vs Search Engines
  - Writing Effective Prompts and Evaluating AI output
  - Risks and Best Practices
  - Practical Exercise

Phase 2

- **Enterprise VPN technologies**
  - Securely connecting branch offices using VPN technologies – IPSec, DMVPN
  - Securely connecting remote workers using Remote Access VPN solutions
  - Securing Internet access using Next Generation Firewalls
  - Practical Exercise

- **Cloud Technologies**
  - Overview of the Microsoft 365 SaaS platform
  - Overview of Microsoft Entra ID (formerly Azure AD) and Azure IaaS services
  - Practical Exercise

- **Identity Management systems**
  - Understanding authentication and authorization
  - Multi-Factor Authentication
  - Identity management and directory services using Active Directory Domain Services and Microsoft Entra ID (formerly Azure AD) Cryptography basics, certificate authentication and enterprise certificate services
  - Practical Exercise

- **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

- **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**
  - Understanding software-defined technologies
  - Software-defined Access and WAN
  - Software-defined DC

- **Automation and Integration tools**
  - Cloud Native Platforms
  - Infrastructure as Code
- **Introduction to LLMs and AI**
  - Understanding how AI models work
  - Understanding Neural networks and Machine Learning
  - Practical Exercise

- **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
- **Business Etiquette**

- **Company culture and values. Personal development**
- **Office Productivity tools**
- **Personal assignments and presentations**
- **On-site visit to one of the largest datacenters in Bulgaria**
- **Opportunity for participation in real projects**