

- **Introduction to GPON Technology:**
 - Overview of GPON architecture and components.
 - Advantages of GPON over traditional networking technologies.
 - Basic principles of GPON transmission and reception.
- **GPON Network Components:**
 - OLT (Optical Line Terminal) and ONT (Optical Network Terminal) functionalities.
 - Understanding the role of PON (Passive Optical Network) splitters.
 - Different types of optical fibers used in GPON networks.
- **Hardware Setup:**
 - Physical setup of OLT and ONT equipment.
 - Connection of optical fibers, splitters, and other relevant hardware.
 - Powering up and verifying the initial status of the network components.
- **Configuration and Provisioning:**
 - Accessing the OLT management interface.
 - Creating service profiles for ONTs.
 - Assigning VLANs and configuring bandwidth profiles.
 - Setting up authentication and security measures.
- **Service Deployment:**
 - Configuring various services such as internet, VoIP, and IPTV.
 - Quality of Service (QoS) configuration for prioritizing traffic.
 - Testing service availability and performance.
- **Troubleshooting and Maintenance:**
 - Identifying common issues in GPON networks.
 - Diagnosing problems using management tools and logs.
 - Performing optical power measurements and troubleshooting fiber issues.
 - Upgrading firmware and software on network devices.
- **Performance Optimization:**
 - Monitoring network performance metrics.
 - Identifying bottlenecks and optimizing bandwidth allocation.
 - Implementing redundancy and failover mechanisms.
- **Advanced Topics (Optional):**
 - GPON security best practices.
 - Integration with other network technologies (e.g., Ethernet, Wi-Fi).
 - Future trends and developments in GPON technology.
- **Hands-On Labs as per available resources**
 - Practical exercises simulating real-world scenarios.
 - Configuring GPON equipment according to provided requirements.

- Troubleshooting simulated network issues.