## Module 1: Course Introduction

- Introductions and course logistics
- Course objectives

## Module 2: Software-Defined Data Center

- Describe the evolution of the software-defined data center
- Cloud computing overview
- Characteristics of cloud services
- Categories of cloud computing
- Describe the VMware product stack for the software-defined data center

## Module 3: vCloud Director Concepts

- Explain vCloud Director concepts
- Configure and manage provider VDCs
- Identify storage, compute, and network resources for vCloud Director
- Create and manage organizations
- vCloud Director organization VDCs

## Module 4: Organization VDCs

- Organization VDC allocation models
- Recognize resource allocations for an organization
- Describe the network types available in vCloud Director (external, organization, and vApp)
- Discuss the organization and vApp network traffic choices
- Examine the function of network pools

## Module 5: Virtual Machines and vApps

- Discuss the use of virtual machines
- Design and manage vApps

## Module 6: Catalogs

- Create and manage catalogs
- Manage vApp templates

## Module 7: Users and Role-Based Access

- Describe role-based access
- Create custom security roles
- Describe and configure LDAP integration with Active Directory
- Describe single sign-on
- Enable a SAML identity provider

- Describe two-factor authentication

## Module 8: Advanced Networking

- Describe the use and placement of NSX edge services gateways in relation to vCloud Director
- Review routing with the distributed logical router and edge services gateways in combination with vCloud Director
- Firewall management in vCloud Director with edge services gateways and the distributed firewall

## Module 9: Resource Management and Monitoring

- Manage provider and organization VDCs
- Manage VMware vCenter Server® instances and VMware ESXi™ hosts
- Manage vSphere datastores
- Configure and manage resource pools at the vSphere level
- Monitor usage information at provider and organization VDCs
- Analyze vCloud Director logs
- Monitor vCloud Director environments with VMware vRealize® Operations Manager™ and VMware vRealize® Log Insight™
- Use VMware vRealize® Business™ for cost management

## Module 10: Customer Onboarding and Hybrid Cloud

- Tenant layer 2 VPN access
- Tenant SSL VPN access
- Review options for external connectivity with VPN
- Import existing infrastructure managed by vCenter Server into vCloud Director
- Use vCloud Director Extender for hybrid cloud setup and onboarding

## Module 11: vCloud Availability for vCloud Director

- Architecture for vCloud Availability for vCloud Director
- Prerequisites of vCloud Availability for vCloud Director
- Implementation of vCloud Availability for vCloud Director

## Module 12: vCloud Director Installation

- vCloud Director network, hardware, and software requirements
- vCloud Director setup overview
- vCloud Director cell design
- Install and configure the vCloud Director database (Microsoft SQL Server, Oracle database, or PostgreSQL)
- Create SSL certificates
- Configure VMware NSX® Manager™ for a new vCloud Director installation
- Install and configure an AMQP broker

- Download and install the VMware public key
- Use and set up vCloud Director federation

## Module 13: vCloud Director API and Metadata

- Describe tools to access the API of vCloud Director API
- Use of REST API in VMware vRealize® Orchestrator™
- Describe access to vCloud Director using VMware PowerCLI™
- Create and update metadata on objects