

**CUYAMACA COLLEGE**  
COURSE OUTLINE OF RECORD

**COMPUTER AND INFORMATION SCIENCE 295 – VMWARE CERTIFIED PROFESSIONAL**

2 hours lecture, 3 hours laboratory, 3 units  
*Total contact hours: 32-36 lecture, 48-54 laboratory*

**Catalog Description**

Comprehensive hands-on instruction on enterprise level data center virtualization. Topics include: concepts of Data Center Virtualization; common IT virtualization challenges faced by organizations; and installation, configuration, and management of VMware vSphere (which consists of VMware ESXi and VMware vCenter Server). Course maps to the current VMware Certified Professional exam.

**Prerequisite**

“C” grade or higher or “Pass” in CIS 290 or 291 or equivalent or two years verifiable server administration experience

**Entrance Skills**

Without the following skills, competencies and/or knowledge, students entering this course will be highly unlikely to succeed:

- 1) Ability to configure, manage and troubleshoot server networking issues.
- 2) Ability to configure, manage and troubleshoot server access and authentication issues.
- 3) Ability to configure, manage and troubleshoot drive partitions.
- 4) Ability to configure, manage and troubleshoot server security.

**Course Content**

- 1) Virtualization theory, fundamentals and concepts
- 2) Installation, deployment and management of an ESXi host including storage and networking
- 3) Deployment and management of a vCenter Server instance and appliance
- 4) Virtual machine creation, deployment and management including thin-provisioning
- 5) vSphere infrastructure management, virtual machine migration, access and resource usage
- 6) Manage vSphere high availability, fault tolerance, data protection and system updates

**Course Objectives**

Students will be able to:

- 1) Define datacenter virtualization theory, components and fundamental concepts.
- 2) Deploy an ESXi host.
- 3) Deploy a vCenter Server instance and/or appliance.
- 4) Manage an ESXi host using vCenter Server, including storage and networking.
- 5) Create and manage virtual machines using vCenter Server, including thin-provisioning.
- 6) Migrate virtual machines with VMware vSphere vMotion and Storage vMotion.
- 7) Manage vSphere infrastructure with VMware vSphere Web Client and VMware vSphere Client™.
- 8) Manage and monitor access control and resource usage using vCenter Server.
- 9) Manage VMware vSphere High Availability, VMware vSphere Fault Tolerance, and VMware vSphere Data Protection™ using vCenter Server.
- 10) Apply patches using VMware vSphere Update Manager.

**Method of Evaluation**

A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in the subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.

- 1) Written quizzes and exams that measure students’ ability to define and use virtualization theory, components and fundamental concepts.
- 2) Scenario-based lab activities that measure students’ ability to configure specific datacenter virtualization installation, deployment and management tasks.
- 3) Practical application-based examinations that measure students’ ability to configure specific datacenter virtualization installation, deployment and management tasks and apply the correct configuration changes to achieve the correct results.

**Special Materials Required of Student**

Electronic storage media

**Minimum Instructional Facilities**

- 1) Current version of VMware ESXi, vCenter and vSphere software
- 2) Computer lab with configurable hard drives installed with appropriate software, or a virtualized lab environment using VMware software that is accessible via the campus network or the Internet
- 3) Instructional domain server capable of student client computer connection (real or virtual)

**Method of Instruction**

- 1) Lecture and demonstration
- 2) Hands-on practice
- 3) Topical discussion of current operating system trends and issues

**Out-of-Class Assignments**

- 1) Text reading assignments
- 2) Practical application labs and projects
- 3) Exams and quizzes
- 4) Topical discussions on pertinent industry case studies and current events

**Texts and References**

- 1) Required (representative example): Atkinson, Brian. *VMware Certified Professional–Data Center Virtualization on vSphere 5.5 Study Guide (VCP-550)*. Sybex, 2014.
- 2) Supplemental: None

**Student Learning Outcomes**

Upon successful completion of this course, students will be able to:

- 1) Install, deploy, configure and manage a datacenter virtualization project using current industry software and standards.