Las Positas College
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Course Outline for CNT 7285

CLOUD INFRASTRUCTURE AND SERVICES

Effective: Fall 2018

I. CATALOG DESCRIPTION:
CNT 7285 — CLOUD INFRASTRUCTURE AND SERVICES — 3.00 units

This course covers the objectives of the CompTIA Cloud+ and EMC E20-002 Cloud Infrastructure and Services certification exams. Topics included are cloud deployment and service models, cloud infrastructure, and the key considerations in migrating to cloud computing, including compute, storage, networking, desktop and application virtualization. Additional areas of focus are backup/recovery, business continuity, security, and management.

2.50 Units Lecture 0.50 Units Lab

Strongly Recommended
CNT 52 - Networking Fundamentals
with a minimum grade of C

Grading Methods:
Letter or P/NP

Discipline:
- Computer Information Systems or
- Computer Service Technology

	MIN
Lecture Hours:	45.00
Expected Outside of Class Hours:	90.00
Lab Hours:	27.00
Total Hours:	162.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering this course, it is strongly recommended that the student should be able to:

A. CNT52
1. describe and differentiate the devices, protocols, and services used to support communications in data networks and the Internet;
2. describe the major functions of LAN hardware protocols such as Ethernet; and WAN protocols such as T-series, DSL, ATM, and Frame Relay;
3. build a router and switch topology; and configure the devices to communicate with computers;
4. identify the responsibilities of a LAN system administrator;
5. monitor the network activity using monitoring tools to view packets and analyze traffic.

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

A. Explain the importance and benefits of Cloud computing and the need for its rapid adoption
B. Explain roadmap for transformation from Classic to Cloud environment
C. Identify and differentiate various infrastructure components of classic and virtualized data center
D. Explain virtualization requirements and available tools at each layer of IT infrastructure
E. Explain business continuity options in a virtualized environment
F. Discuss effective cloud computing deployment models for businesses /IT organizations
G. Perform detailed exploration of cloud products and services
H. Describe infrastructure framework and service management activities in Cloud computing
I. Address security concerns commonly found in Cloud computing environments
J. Formulate high-level cloud migration strategy and best practices

V. CONTENT:
A. Cloud Computing Concepts, Models, and Terminology

B. Disk Storage Systems
C. Storage Networking
D. Network Infrastructure
E. Virtualization Components
F. Virtualization and the Cloud
G. Network Management
H. Performance Tuning
I. Systems Management
J. Testing and Troubleshooting
K. Security in the Cloud
L. Business Continuity and Disaster Recovery

VI. METHODS OF INSTRUCTION:
A. **Demonstration** -
B. **Lecture** -
C. **Lab** -
D. **Directed Study** -

VII. TYPICAL ASSIGNMENTS:
A. Read the textbook chapter on Virtualized Data Center-Compute. Compare and contrast the hardware resources required to host multiple web sites, including load balancing and redundancy.
B. Log on to the NETLAB+ virtual laboratory. Create and configure a virtual data center using vSphere and vCenter applications.

VIII. EVALUATION:
A. **Methods**

1. Exams/Tests
2. Quizzes
3. Lab Activities

B. **Frequency**

1. Weekly assignments & lab activities
2. Periodic quizes and tests
3. Mid Term and Final Exam

IX. TYPICAL TEXTS:
1. Wilson, Scott, and Eric Vanderburg. *CompTIA Cloud+ Certification Study Guide, Second Edition (Exam CV0-002).* 2nd ed., McGraw Hill, 2018.
2. Montgomery, Todd. *CompTIA Cloud+ Study Guide: Exam CV0-001.* 1st ed., Sybex, 2016.
3. Marinescu, Dan. *Cloud Computing Theory and Practice.* 2nd Edition ed., Morgan Kaufmann, 2017.

X. OTHER MATERIALS REQUIRED OF STUDENTS:
A. Association of Computing Machinery ACM.org student membership