



CTN276 - Virtualization and the Cloud 1

Document Type: District Master Course Outline
Proposal Type: New Course
Requester(s): Carol Koepke Paco Mesch
College: South
Origination Approved: 08/07/2012 - 4:27 PM

BASIC INFORMATION

Requester(s): Carol Koepke
Paco Mesch

College: South Seattle Community College

Division/Dept: Professional Technical

Dean: Duncan G Burgess

Peer Reviewer(s): David Herman
Paco Mesch

COURSE INFORMATION

Proposed Course Number:

Prefix: **CTN** Number: **276**

- Request a new Prefix
- This will be a common course

Full Title: Virtualization and the Cloud 1

Abbreviated Title: Virtualization & Cloud 1

Catalog Course Description:

Learn how Cloud computing and virtualization technologies work. Covers differences between Cloud computing and virtualization; the technologies; TCO and continuing costs; decision guidelines. IT departments are using/migrating to these technologies. Xen, Hyper-V, VMware and application level virtualization technologies will be discussed and/or used. Prereq: CTN 142, 274 & 282 (2.0 or better).

Course Length: 11 Weeks Request an Exception

Course Prerequisite(s):

CTN 142, CTN 274 & CTN 282

Topical Outline:

Topics	Hours
I. Introduction to Cloud Computing a. Basic concepts of Cloud Computing and current trends. b. Three cloud technologies. c. What does the client really want to accomplish? (Should everything be in the Cloud?)	10

d.Cloud support software- commercial products and vendors: methods, pricing, licensing and maintenance contracts. e.SharePoint - (with possible hands-on)	
II. Virtualization Basics a.Virtualization defined b.What should/should not be virtualized? c.Versions and licensing d.Is it economical? (TCO, setup costs; long term costs/savings) e.Disaster potentials and recovery strategies f.Comparing Virtualization technologies g.VMware server - (version, costs of product, creating VM) h.Citrix * Products list * Xen Server * Xen Center (create and customize virtual machines) i.Microsoft Virtual PC (VPC console- create and customize virtual machines) j.Microsoft Hyper-V (using Win 2008 r2 create and customize virtual machines) k.Virtual Box- (create and customize virtual machines)	20
III. Applying Virtualization a.Managing the Virtualization server b.Server backup methods c.Migrations d.Desktop Virtualization (strong hands-on component) e.Network and Storage Virtualization	20
IV. Building the virtual infrastructure a.Form-factor and hardware architecture choices b.Vendor choices c.Planning d.Deployment e.Maintenance	5

Total Hours = 55

COURSE CODING

Funding Source: 1.....State
Institutional Intent: 21.....Vocational Preparatory

This Course is a requirement for the following program(s):

Program Title

 NETWORK ADMIN (527)

My Course Proposal is a requirement for a program not on this list

Will this course transfer to a 4-year university?

No

Is this course designed for Limited English Proficiency?
 Is this course designed for Academic Disadvantaged?
 Does this course have a Workplace Training component?

No
No
No

CIP Code: 11.0901 Request Specific CIP Code
 EPC Code: 527 Request Specific EPC Code

Credits:

Will this course be offered as Variable Credit? **No**

List Course Contact Hours

Lecture (11 Contact Hours : 1 Credit)	55
Lab (22 Contact Hours : 1 Credit)	0
Clinical Work (33 Contact Hours : 1 Credit)	0
Other (55 Contact Hours : 1 Credit)	0
Total Contact Hours	55
Total Credits	5

COLLEGE SUPPLEMENTAL

Proposed Quarter of Implementation: NA Request Provisional Exception
 We want Spring 2013

Class Capacity: 24

Modes of Delivery: (Check all that apply)

- Fully On Campus
- Fully Online
- Hybrid
- Other Explanation:

Student Learning Outcomes:

Communication

Read and listen actively to learn and communicate

Many detailed sequenced instructions which must be followed for successful configuratons.
 This technology involves legal contracts and licenses which must be read, interpreted, paid for and explained to peers.

Speak and write effectively for personal, academic, and career purposes

Skills are required for explaining problems and solutions will be practiced.

Human Relations

Use social interactive skills to work in groups effectively

Working in groups is expected in the classroom and on certain homework projects.

Critical Thinking and Problem-Solving

Think critically in evaluating information, solving problems, and making decisions

Demonstrate problem solving for virtualization configurations and products by utilizing critical and abstract thinking skills.

Technology

Select and use appropriate technological tools for personal, academic, and career tasks

Be able to select the correct tool (product and vendor) to meet a client or company's requirements.

Personal Responsibility

Be motivated and able to continue learning and adapt to change

Recognize the need to continue to learn about virtualization software, hardware, usage, costs, long term effects, networking logistics changes.

Value one's own skills, abilities, ideas and art

Be able to demonstrate time management skills and independent work habits.

Take pride in one's work

Information Literacy

Access and evaluate information from a variety of sources and contexts, including technology

Access and evaluate information from a variety of sources and contexts as the need for virtualization software, hardware, usage, costs, long term effects, networking logistics change.

Program Outcomes:

- 2a. Install and properly configure network devices and related operating systems.
- 2g. Select, configure, and use different operating systems
- 3a. Select, implement appropriate troubleshooting tools and methods for problem solving.
- 3c. Troubleshoot and solve problems occurring at any level of the OSI layers in a network.
- 3g. 4a. Make use of software applications for utilitarian or presentation purposes.
- 4a. Use critical thinking for analysis of hardware, OS, or network problems.
- 4b. Access information efficiently and accurately to resolve computer problems.
- 4c. Work effectively with others to accomplish complex tasks.
- 4d. Develop logical thinking skills.
- 4e. Develop effective communication skills.
- 4f. Be able to explain and communicate problems accurately and the related solutions effectively.

Course Outcomes/Objectives:

- Know the basic concepts of Cloud Computing and current trends.
- Know the differences among three cloud technologies.
- Know what information needs to be collected from the clients before deciding to place an application into the cloud.
- Know the basic concepts of virtualization and current trends.
- Be able to explain procedures; problems and concepts of the three most common virtualization products
- Be able to list the physical requirements for a physical virtualization server to meet a company's specific virtualization needs.
- Be able to list, discuss and compare the advantages and disadvantages of each of the three most

popular VM products.

- Be able to analyze the TCO and change-over costs for a potential VM installation.
- Be able to determine a working quantity of configurable resources for the initial creation of a virtualized operating system such as XP or Win7 (RAM, storage, etc.)

Explain the student demand for the course and potential enrollment:

We ran a CTN 298 experimental course. We had 25 students enrolled and a wait-list. No student dropped the course.

We get asked constantly by students if and when we'll offer such a course. Potential enrollment could easily reach two sections per year. We expect that the 'public' IT employees who want to enhance their skills will attend this class.

Explain why this course is being created:

This set of technologies is THE BOOM (fastest growing technology area) for anyone job searching in IT. SSCC is the first college to offer a 5 credit course specifically addressing these topics. It is a world-wide demand. This course will get the attention of the potential employer and it was heartily applauded by our TAC.

We get asked constantly at school and in IT meetings if and when we'll offer such a course. Cisco Education is interested in our Course Outline.

We expect that the 'public' IT employees who want to enhance their skills will attend this class.

What challenges, if any, do you foresee in offering this course:

We do not anticipate any challenges beyond those that we have already solved.

This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.

Faculty involved in originating this program:

Carol Koepke

Print Name

Carol Koepke

Signature

8/1/2012

Date

Paco Mesch

Print Name

Paco Mesch

Signature

8/1/2012

Date

Dean:

Duncan G Burgess

Print Name

Duncan G Burgess

Signature

8/3/2012

Date

Results of SSCC Curriculum Coordinating Council Findings

Participating Faculty Response and Remarks

- Recommended for approval
- Not recommended for approval
- This course did not go through Committee Review

Chairman, Curriculum Coordinating Council:

Print Name

Signature

Date

Vice President for Instruction:

Donna Miller-Parker

Print Name

Donna Miller-Parker

Signature

8/7/2012

Date