Course Outline of Record Report

10/12/2021

CSCIC193 : System and Network Administration

General Information

Author:	-
Course Code (CB01) :	CSCIC193
Course Title (CB02) :	System and Network Administration
Department:	Business Information Technolog
Proposal Start:	Fall 2013
TOP Code (CB03) :	(0708.10) Computer Networking
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	Yes
Course Control Number (CB00) :	CCC000574154
Curriculum Committee Approval Date:	04/01/2016
Board of Trustees Approval Date:	05/05/2016
External Review Approval Date:	06/10/2016
Course Description:	This course provides students with the knowledge and skills required to build, maintain, troubleshoot and support server hardware and software technologies. Topics include environmental issues; disaster recovery and physical / software security procedures; industry terminology and concepts; server roles / specializations; and interaction within the overall computing environment. This course prepares students for the current version of CompTIA's Server+ certification exam.
Submission Type:	New Course
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	No value
Alternate Master Discipline Preferred:	No value
Bachelors or Associates Discipline Preferred:	- Computer Information Systems (Computer network installation, microcomputer technology, computer applications) - Computer Service Technology
Additional Bachelors or Associates Discipline Preferred:	No value

Course Development Options

Basic Skills Status (CB08)

Course is not a basic skills course.

Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Allowed Number of Retakes

0

Grade Options

- Letter Grade Methods

Course Prior To College Level (CB21)

Not applicable.

Exam/Challenge   0   Not applicable.

Rationale For Credit By Exam/Challenge   **Retake Policy Description**
                                                                          ☑ Allow Students To Audit Course
No value   Type:|Non-Repeatable Credit

Course Support Course Status (CB26)

No value

Associated Programs

☑ Course is part of a program (CB24)

Associated Program	Award Type	Active
Cyber Security Technology	A.S. Degree Major	Spring 2018
Cyber Security Technician	Certificate of Achievement	Spring 2018

Transferability & Gen. Ed. Options

Course General Education Status (CB25)

No value

Transferability   **Transferability Status**

Transferable to CSU only   Approved

Units and Hours:

Summary

Minimum Credit Units (CB07)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	72
Total Course Out-of-Class Hours	90
Total Student Learning Hours	162
Faculty Load	0

Credit / Non-Credit Options

Course Credit Status (CB04)   **Course Non Credit Category (CB22)**   **Non-Credit Characteristic**

Credit - Degree Applicable	Credit Course.	No Value

Course Classification Status (CB11)

Credit Course.

☐ Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

Weekly Student Hours

	In Class	Out of Classs
Lecture Hours	2.5	5
Laboratory Hours	1.5	0
Activity Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0

Course In-Class (Contact) Hours

Lecture	0
Laboratory	0
Activity	0
Total	72

Course Out-of-Class Hours

Lecture	0
Laboratory	0
Activity	0
Total	90

Time Commitment Notes for Students

No value

Faculty Load

Extra Duties: 0

Faculty Load: 0

Units and Hours: - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite

CSCIC143 - Computer Network Fundamentals

Students need a basic understanding of networking terminology, network structure to transfer that knowledge to network security. This material is covered in the CSCI C143 course.

AND

Advisory

CSCIC101 - Introduction to Computer Information Systems

Students need to be able to identify hardware components of a computer system, understand the basics of operating systems and application software, install software, understand what memory is, how to zip and unzip files, how to save and find files and understand the basics of network topology. This material is covered in the CSCI C101 course.

Entrance Skills

Entrance Skills	Description
No value	No value

Limitations on Enrollment

Limitations on Enrollment	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	Outside reading
Rationale	Textbook and Electronic Readings

Methods of Instruction	Problem Solving
Rationale	No value

Methods of Instruction	Project-based learning
Rationale	No value

Methods of Instruction	Audiovisual
Rationale	Pre-recorded Training Videos

Methods of Instruction	Lecture
Rationale	No value

Methods of Instruction	Presentations (by students)
Rationale	No value

Methods of Instruction	Laboratory
Rationale	No value

Methods of Instruction	Discussion
Rationale	No value

Methods of Instruction	Demonstration
Rationale	No value

Assignments

A. Chapter reading (Example: Reading the assigned chapters from the textbook based on the topics for the week).
B. Research and analysis projects (Example: Research system log events to determine the source of a server configuration error).
C. Simulation and lab assignments (Example: Install Active Directory in a virtual environment.).

Methods of Evaluation	Rationale
Final Exam	Comprehensive Exam: A comprehensive exam in a proctored environment will evaluate a student's preparedness for the Server+ exam.
Tests	Objective Exams: Objective exams will evaluate the student's comprehension of text material and prepare them for the Server+ certification exam environment.
Homework	Hands on simulations: Activities will reinforce the practical application of theories presented in the text. Simulations will also provide insight and training into real world tasks for IT Professionals. For example, install Active Directory in a simul
Participation	Discussions: Students will participate in discussions to critically explore concepts and compare elements of the text. For example: Discuss best practices for applying permissions to users in Active Directory.

Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
	Limoncelli, T., Hogan C. & Chalup, S. . (2012) The Practice of System and Network Administration, 2nd, Addison-Wesley			

Other Instructional Materials

No Value

Materials Fee

No

Learning Outcomes and Objectives

Course Objectives

No value

CSLOs

Evaluate the hardware components and software features used in an operating server environment.

Expected SLO Performance: 70.0

Install, configure, and troubleshoot servers in the deployment and maintenance of an operating server environment.

Expected SLO Performance: 70.0

Propose server design solutions using industry best practices to include deployment, configuration, maintenance, administration, and disaster recovery of an operating server environment.

Expected SLO Performance: 70.0

Outline

Course Outline

- Introduction to servers
    a. Examine the network architecture
    b. Identify common server types and functions
- Exploring the server hardware
    a. Identify server system board components
    b. Explore system processing core
    c. Explore server memory
    d. Examine server cooling and power systems
- Introduction to server software
    a. Describe server software
    b. Network operating system (NOS) management features
    c. Network operating system (NOS) security features
    d. Network essentials for servers

- Exploring the server storage system
    - a. Examine storage devices used for servers
    - b. Exploring disk interfaces, such as Integrated Drive Electronics (IDE) and Small Computer System Interface (SCSI)
    - c. Describe Random Arrays of Independent Disks (RAID)
    - d. Explore Network-Attached Storage (NAS) implementations
    - e. Explore Storage Area Network (SAN) implementations
- Installing the server hardware
    - a. Identify the best practices in server hardware installation
    - b. Install hardware components on a server
    - c. Verify server installation
    - d. Install a server in a network environment
- Configuring servers
    - a. Network operating system (NOS) installation and verification
    - b. Install system monitoring agents and service tools
    - c. Server configuration documentation
- Examining the issues in upgrading server components
    - a. Examine an upgrade checklist
    - b. Examine the issues in upgrading server hardware
    - c. Examine the issues in upgrading server software
- Examining servers in an it environment
    - a. Industry best practices for server installation and maintenance
    - b. Server security and access methods
- Troubleshooting servers
    - a. Examine the troubleshooting theory and methodologies
    - b. Troubleshoot server hardware problems
    - c. Troubleshoot server software problems
    - d. Troubleshoot server network problems
    - e. Troubleshoot server storage device problems
- Exploring disaster recovery concepts and methodologies
    - a. Examine disaster recovery plans
    - b. Implement disaster recovery methodologies
    - c. Implement replication methods

Lab Outline

1. Installing Server Operating Systems
2. Installing and Configuring Active Directory
3. Configuring Server Security Permissions
4. Monitoring Server Performance

Delivery Methods and Distance Education

Delivery Method: Please list all that apply -Face to face -Online (purely online no face-to-face contact) -Online with some required face-to-face meetings ("Hybrid") -Online course with on ground testing -iTV – Interactive video = Face to face course with significant required activities in a distance modality -Other

Face 2 Face
Online
Hybrid
Interactive

Rigor Statement: Assignments and evaluations should be of the same rigor as those used in the on-ground course. If they are not the same as those noted in the COR on the Methods of Evaluation and out-of-class assignments pages, indicate what the differences are and why they are being used. For instance, if labs, field trips, or site visits are required in the face to face section of this course, how will these requirements be met with the same rigor in the Distance Education section?

All assignments in distance education courses (online, hybrid and iTV) of CSCI C193 are of the same rigor as those in the on-ground

course, except that students in purely online sections will submit all of their assignments virtually.

Effective Student-Instructor Contact: Good practice requires both asynchronous and synchronous contact for effective contact. List the methods expected of all instructors teaching the course. -Learning Management System -Discussion Forums -Moodle Message -Other Contact -Chat/Instant Messaging -E-mail -Face-to-face meeting(s) -Newsgroup/Discussion Board -Proctored Exam -Telephone -iTV - Interactive Video -Other (specify)

contact_moodle_forums
contact_moodle_message
contact_chat
contact_email
contact_discussion
contact_itv

Software and Equipment: What additional software or hardware, if any, is required for this course purely because of its delivery mode? How is technical support to be provided?

For face to face delivery, a 3 node server cluster running VMWare ESXi or Hyper-V which can be used to host virtual environments. Network equipment to establish a private network to provide connectivity to the class servers. Modern workstations with wired

Accessibility: Section 508 of the Rehabilitation Act requires access to the Federal government's electronic and information technology. The law covers all types of electronic and information technology in the Federal sector and is not limited to assistive technologies used by people with disabilities. It applies to all Federal agencies when they develop, procure, maintain, or use such technology. Federal agencies must ensure that this technology is accessible to employees and the public to the extent it does not pose an "undue burden". I am using -iTV—Interactive Video only -Learning management system -Publisher course with learning management system interface.

s508_itv
s508_moodle
s508_publisher

Class Size: Good practice is that section size should be no greater in distance ed modes than in regular face-to-face versions of the course. Will the recommended section size be lower than in on-ground sections? If so, explain why.

No Value