COURSE OUTLINE: NASA102 - SERVER INFR + SECUR.

Prepared: D. Kachur
Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	NASA102: SERVER INFRASTRUCTURE AND SECURITY
Program Number: Name	2196: NETWRK ARCH & SEC AN
Department:	COMPUTER STUDIES
Semesters/Terms:	20F
Course Description:	In this course, students will plan, design and install an Active Directory based Windows Network Server. The environment will then be secured via Firewall and OS updates in preparation for Shares / Folders / File level Security. Using a Windows client OS, students will test their Network DNS, Group Policy, Web and Certificate configurations in an Active Directory model. The final part of the course will have students exploring and applying Backup and Disaster Recovery plans for the Network Environment.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**2196 - NETWRK ARCH & SEC AN** VLO 2 Perform network monitoring, analysis and troubleshooting to determine efficient and secure operations. VLO 6 Design and implement a virtualization and cloud computing focused infrastructure specifically addressing security risks associated with incorporating virtualization into an organizations infrastructure. VLO 7 Deploy servers to host web applications, focusing on securing the server and web from identified security risks.
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 10 Manage the use of time and other resources to complete projects.
Course Evaluation:	Passing Grade: 50%, D

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	A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	A+ = 90-100% A = 80-89% B = 70-79% C = 60-69% D = 50-59% F < 50% Students are expected to be present to write all tests in class. If a student is unable to write a test due to illness or a legitimate emergency, that student must contact the professor prior to class and provide reasoning, which is acceptable to the professor. Should the student fail to contact the professor, the student shall receive a grade of zero on the test. Once the test has commenced, the student is considered absent and will not be given the privilege of writing the test. Students caught cheating during a test will receive an automatic zero. Please refer to the College Academic Dishonesty Policy for further information. In order to qualify to write a missed test, the student shall have: a) attended at least 80% of the classes. b) provided the professor an acceptable explanation for his/her absence. c) been granted permission by the professor. NOTE: The missed test that has met the criteria above will be an end-of-semester test. Academic success is directly linked to attendance. Missing more than 1/3 of the course hours in a semester shall result in an `F` grade for the course. Labs and Assignments are due on the due-date indicated by the Professor. Notice by the professor will be written on the lab or verbally announced in the class and / or both. No late labs will be accepted beyond the due date. Once labs / assignments have been marked by the professor and returned to the student, no new labs / assignments will be accepted. It is the responsibility of the student who has missed a class to contact the professor immediately to obtain the lab / assignment that is due at a future date. Students are responsible for doing their own work. Labs / assignments that are handed in and are deemed identical in content and personal wording to others may constitute academic dishonesty and result in a zero grade. The total overall average of test scores combined must be 50% or higher in order to qualify to pass this course. In addition, combined tests, Labs / Assignments total grade must be 50% or higher.
Books and Required Resources:	Online Students DO NOT require the HDD by In-Class Students Only: USB Removable HDD 1 TB or larger No books required
Course Outcomes and Learning Objectives:	

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Install and configure a Windows Network Server	1.1 Download Windows Server source files and license key from the Microsoft Academic Alliance site

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.

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	1.2 Create a Windows Server Virtual image 1.3 Install a Windows Server on a Virtual Machine 1.4 Login to 2016 Server and create a backup Administrator account 1.5 Configure TCP/IP to access the network and Internet 1.6 Lockdown Windows Server using a Firewall, Anti-Virus and Service Pack updates 1.7 Install and configure a DNS Server 1.8 Promote Windows Server to a Domain Controller in an Active Directory model
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Administer a Windows Server (Users and Groups)	2.1 Explore Administrative Tools 2.2 Work with `Active Directory Users and Computers` tool 2.3 Contrast Network User Accounts and Group Types 2.4 Create User Accounts and Domain Local Groups 2.5 Add Users to Groups
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Install Microsoft Windows 10	3.1 Download Windows 2010 source files and license key from the Microsoft Academic Alliance site 3.2 Create a Windows 10 Virtual Machine 3.3 Install Windows 2010 on a Virtual Machine 3.4 Login to 2010 and create a backup Administrator account 3.5 Configure TCP/IP to access the network and Internet 3.6 Configure Windows 2010 to prepare for an Active Directory connection with your Windows Server 3.7 Join Windows 10 to your Windows Server AD Domain
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Administer Windows Server (Shares, Folders and Files)	4.1 Explore Share Level Permissions 4.2 Identify the various Security settings 4.3 Apply Folder and File Level Security 4.4 Contrast Share level vs Folder / File level Security 4.5 Apply and test Shares / Folders and File Permissions in an NTFS-based environment using hands-on business lab examples 4.6 Use Windows 10 client to test Windows Server Share / Folder / File level security
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Apply Group Policy	5.1 Explain and compare Policies vs. Profiles 5.2 Contrast Local vs. Group policies 5.3 Work with the Window Domain and Domain Controller Group Policies 5.4 Explain the hierarchy of Policy ordering and execution 5.5 Contrast then create Local and Roaming profiles 5.6 Diagram the flow of Roaming profiles 5.7 Implement Group Policies to restrict user accessibility on the Network 5.8 Map drives and re-direct folders using Group Policy 5.9 Test group policy using a Windows 10 client

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Course Outcome 6	Learning Objectives for Course Outcome 6
6. Install and Configure Web Services	6.1 Install and configure an IIS Web Server 6.2 Install and configure an FTP Server 6.3 Create a Website for testing purposes 6.4 Apply and test various security settings to your website using basic, windows and reverse encryption authentication processes 6.5 View and analyse Web and FTP Server weblogs 6.6 Create a custom error-reporting webpage 6.7 Explain the role of Certificate Services 6.8 Analyze Web Certificates
Course Outcome 7	**Learning Objectives for Course Outcome 7**
7. Explore Enterprise-Based Networking	7.1 Contrast Domain, Tree and Forest Concepts 7.2 Explain Multi-Master Replication 7.3 Diagram a Multi-site Active Directory Domain Model 7.4 Explain the role and benefits of Distributed File System
Course Outcome 8	**Learning Objectives for Course Outcome 8**
8. Create Backup Strategies and Disaster Recovery Plans	8.1 Analyze backup methods and schedules 8.2 Work with the file `Archive` bit for backups and restores 8.3 Perform Volume backups 8.4 Research Storage Area Networks 8.5 Explain off-site backups and data backup integrity testing

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	40%
Tests and Quizzes	60%

Date:

September 11, 2020

Addendum:

Please refer to the course outline addendum on the Learning Management System for further information.

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