SYLLABUS

DIVISION: Business and Engineering Technology **REVISED:** SPRING 2014

CURRICULA IN WHICH COURSE IS TAUGHT: IST, Information Systems Technology

COURSE NUMBER AND TITLE: ITN 213 – Information, Storage, and Management.

CREDIT HOURS: 3 **HOURS/WK**

I. CATALOG DESCRIPTION: ITN 213 - Focuses on advanced storage systems, protocol, and architectures including Storage Area Networks (SAN), Network Attached Storage (NAS), Fibre Channel Networks, Internet Protocol SANs (IPSAN), iSCSI, and Content Addressable Storage (CAS).Lecture 3-4 hours per week.3-4 credits

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES: ITN 213 will address the following Information Technology Outcomes:

- Implement Information Technology skills required by software applications.
- Apply methodologies to stay current in IT offerings, trends and certifications.
- Apply analytical and problem solving skills for computer system design, planning and support.
- Design, code, test, debug, and document software needed for computer system implementation and maintenance.
- Apply current IT industry standards, protocols, and techniques.
- Use instructional applications and material which could lead towards industry certification.

Please Note: The overall Learner Outcomes from all of the course requirements for the A.A.S. Degrees in IT are more in-depth than those of the Career Studies Certificates. However, the IT courses that are the same in both the A.A.S. Degrees and the Certificate Programs carry the same Learner Outcomes and are identical in content. Please review the DCC Catalog or visit the DCC Web Site for more details.

III. REQUIRED BACKGROUND: ITN 255

IV. COURSE CONTENT:

- Identification of Hardware Storage Device Types
- Identification of NAS and SAN Storage device options
- Introduction to Configuration and Deployment of NFS Device Shares (NetApp)
- Introduction to Configuration and Deployment of IQN iSCSI device configurations (Initiator / Target) (NetApp)
- Configure VMware ESXi to connect to NFS Device Shares
- Configure VMware ESXi to connect to iSCSI Device Shares
- Utilizing Windows Operating Systems to connect to NFS Device Shares
- Configure Windows Operating Systems to support iSCSI (Target)
- Utilizing Windows Operating Systems to connect to iSCSI Device Shares (Initiators)

V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE. STUDENTS WILL:

X Communication
X Critical Thinking
Cultural and Social Understanding Information Literacy
X Personal Development
X Quantitative Reasoning
X Scientific Reasoning

VI. LEARNER OUTCOMES **VII. EVALUATION**

Upon conclusion of this course the student will be able to define, discuss, and demonstrate knowledge in the following concepts.	
Identify Hardware Storage Device Types	Lab Exercises and written test - Explain the different hardware vendors who produce storage devices in detail and help identify which hardware platform would be considered a "best practice" for a specific application. Example: NetApp and EMC Storage Solutions. Be able to identify the different storage device types currently available.
Identify the difference in SAN and NAS Storage Options	Lab Exercises and written test - Explain the different SAN and NAS device types that are available and discuss in detail what each type is and which would be the "best fit" for the different applications. Example: ATA over Ethernet, Fiber Channel Protocol, Fiber Channel over Ethernet, iSCSI mapping over TCP/IP, NFS, and Shares. Be able to identify the different options that exist for connecting to SAN and NAS Storage Devices.
Configure and Deploy NFS Device Shares	Lab Exercises and written test - Utilizing the NetApp Storage Server, have student create an NFS partition. After the partition is created have the student "map" a connection from their PC to the NetApp NFS Share. Be able to create an NFS storage share and allow access to clients.
Configure and Deploy of iSCSI Device Shares	Lab Exercises and written test - Utilizing the NetApp Storage Server, have the student create an iSCSI partition. After the partition is created have the student "map" a connection from their PC to the NetApp iSCSI share. This mapping will use the default IQN port assignment. Be able to create iSCSI storage share and allow access to clients. See next block down for continued configuration of iSCSI.
Configure of IQN settings to support iSCSI Shares	Lab Exercises and written test - As a continuation of the prior lab exercise, this time the student will modify the default IQN for an iSCSI share then reassign the student PC mapping to the new IQN identity. Be able to create and modify IQN settings to be assigned to clients.
Configure VMware ESXi 5.5 to connect to NFS and iSCSI Device Shares	Lab Exercises and test - Utilizing the NetApp Storage Server, have student connect to their assigned ESXi server and map the NFS and iSCSI storage shares created in previous labs. Be able to connect to an assigned ESXi server and created network connections to both NFS and iSCSI shares created in previous lab exercises.