

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** LAN Administration

**CODE NO. :** CSN100 **SEMESTER:** 3

**PROGRAM:** IT Studies

**AUTHOR:** Fred Carella (Dan Kachur)

**DATE:** Sep 2010 **PREVIOUS OUTLINE DATED:** Jan 2010

**APPROVED:** "B. Punch"

	CHAIR	DATE
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**TOTAL CREDITS:** 4

**PREREQUISITE(S):** None

**HOURS/WEEK:** 60 Hours Total – 4 hours per week

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*For additional information, please contact Brian Punch, Chair*  
*Natural Environment/Outdoor Studies & Technology Programs*  
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**I. COURSE DESCRIPTION:**

Students will be introduced to Network Operating Systems including current implementations and future trends in the workplace. Developing practical skills in LAN (Local Area Network) installation, administration, and troubleshooting are important objectives of this course.

In this course, students will install and maintain their own Windows 2008 Server in the computer lab. Once the network is operational, students will learn to secure their system by implementing practical security techniques including the installation of a firewall, anti-virus and relevant software updates. The learning process will continue with Network Administration and configuration of Folder / File Permissions, and application of Group Policies. Network Data Backups and Disaster Recovery Plans are covered in this course. In addition, hands-on experience will be obtained with the installation of DNS Server (Domain Name Service) and Network Printing.

Microsoft Windows 2008 Server will be the primary learning tool used.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the student will demonstrate the ability to:

**1. Introduction To Network Operating Systems****Potential Elements of the Performance:**

- Learn the structure of a Network Operating System environment
- Identify the major Network Operating Systems in the workplace
- Compare certifications of each Network Operating System
- Compare pricing, support, and past / current / future market share
- Contrast the difference between Peer-LAN and Client / Server
- Identify the 4 Microsoft Windows 2008 Server software types
- Learn Domain modeling with introduction to Domain Controllers, Trees and Forests
- Configure a Peer-LAN network using your Windows XP system

**2. Install and configure a Windows Network Server****Potential Elements of the Performance:**

- Download Windows 2008 Server source files from the ELMS site
- Create a VMWare image
- Identify the startup location and executable file for the 2008 Server install
- Differentiate between Standalone, Member Server or Domain Controller
- Contrast Computer Name, Domain Name, and DNS Naming structure
- Install a Windows 2008 Server on a VMWare Virtual Machine
- Login to 2008 Server and create a backup Administrator account
- Configure TCP/IP to access the network and Internet
- Lockdown Windows 2008 Server using a Firewall, Anti-Virus and Service Pack updates
- Install a DNS Server in preparation for Network Name Resolution
- Configure DNS and WINS for 'User' and 'Computer' locating on the Network
- Create 'Hosts' and 'lmhost' files for Name Resolution

**3. Administer a Windows Server (Users and Groups)**Potential Elements of the Performance:

- Explore the 'Computer Management' tool
- Work with Active Directory in preparation for a Domain-Based install
- Install Active Directory and convert to a Domain Controller
- Work with 'Active Directory Users and Computers' tool
- Create User Accounts
- Create Domain Local Groups
- Add Users to Groups

**4. Administer Windows 2008 Server (Shares, Folders and Files)**Potential Elements of the Performance:

- Explore Share Level Permissions
- Contrast NTFS vs FAT in a Windows 2008 Server environment
- Apply and test Shares / Folders and File Permissions in an NTFS-based environment using hands-on business lab examples

**5. Implement Group Policy**Potential Elements of the Performance:

- Compare Policies VS Profiles
- Contrast Local and Group policies
- Work with the Window Domain and Domain Controller Group Policies
- Learn the hierarchy of Policy ordering and execution
- Contrast then create Local and Roaming profiles
- Understand the flow of Roaming profiles
- Implement Group Policies to restrict user accessibility on the Network
- Learn how to map drives and re-direct folders using Group Policy

**6. Manage Printing Services**Potential Elements of the Performance:

- Install, configure and secure Printing Services for Windows 2008 Server
- Install and share a Network-based Printer
- Test printing services for both Server and Client

**7. Create Backup Strategies and Disaster Recovery Plans**Potential Elements of the Performance:

- Learn various backup methods and schedules
- Work with file 'Archive' bit for backups and restores
- Perform Volume backups
- Research Storage Area Networks
- Learn about off-site backups and data backup integrity testing

**III. TOPICS:**

<b>SPECIFIC TOPICS</b>	<b>APPROXIMATE TIME (Weeks)</b>
Introduction To Network Operating Systems	1
Install and configure a Windows Network Server	3
Administer a Windows Server (Users and Groups)	3
Administer Windows Server (Shares, Folders, Files)	3
Implement Group Policy	2
Manage Printing Services	1
Create Backup Strategies and Disaster Recovery Plans	2

**IV. REQUIRED RESOURCES / TEXTS / MATERIALS:**

Web: All web references for this course will be posted on LMS

Handouts: Regular handouts will be distributed accordingly in class

Textbook Title: Hands-On Microsoft Windows 2008 Server

*Author: Palmer*

Publisher: Course Technology

ISBN: 1423902343 or 9781423902348

(This book can be purchased **used** from Amazon.ca)

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**V. EVALUATION PROCESS/GRADING SYSTEM:**

Tests (3 Tests – 1 every 5 weeks)	40%
Computer Labs	30%
Quizzes	20%
Attendance	10%

Some minor modifications to the above percentages may be necessary. The professor reserves the right to adjust the mark based upon leadership, creativity and whether there is an improving trend. Students must have passing grades in the tests/quizzes and assignments portion to pass the entire course.

- \* Students must complete and pass the tests and assignment portion of the course in order to pass the entire course.
- \* All Assignments must be completed satisfactorily to complete the course. Late hand in penalties will be 5% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
- \* The professor reserves the right to adjust the number of tests, practical tests and quizzes based on unforeseen circumstances. The students will be given sufficient notice to any changes and the reasons thereof.
- \* A student who is absent for 3 or more times without any valid reason or effort to resolve the problem will result in action taken.

The following semester grades will be assigned to students:

<b>Grade</b>	<b>Definition</b>	<i>Grade Point Equivalent</i>
A+	90 - 100%	4.00
A	80 – 89.9%	
B	70 – 79.9%	3.00
C	60 – 69.9%	2.00
D	50 – 59.9%	1.00
F (Fail)	below 50%	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

## VI. SPECIAL NOTES:

### Attendance:

Absenteeism will affect a student's ability to succeed in this course. Absences due to medical or other unavoidable circumstances should be discussed with the professor. Students are required to be in class on time and attendance will be taken within the first five minutes of class. A missed class will result in a penalty in your marks unless you have discussed your absence with the professor as described above. The penalty depends on course hours and will be applied as follows:

<b>Course Hours</b>	<b>Deduction</b>
5 hrs/week (75 hrs)	1% / hr
4 hrs/week (60 hrs)	1.5% /hr
3 hrs/week (45 hrs)	2% /hr
2 hrs/week (30 hrs)	3%/hr

Absentee reports will be discussed with each student during regular meetings with Faculty Mentors. Final penalties will be reviewed by the professor and will be at the discretion of the professor.

**VII. COURSE OUTLINE ADDENDUM:**

The provisions contained in the addendum located on the portal form part of this course outline.