SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: LOCAL AREA NETWORKS I

Code No: CSN202 *Semester:* 3

Program: COMPUTER NETWORK TECHNICIAN

Author: Tycho Black

Date: June , 1998 *Previous Outline Dated:* August, 1997

Approved: Dean June 28/98 Date

Total Credits: 6

Prerequisites: CSO100 (Prerequisite), CSN200 (Co-requisite)

Length of Course: 4 Hours /Week Total Credit Hours: 96

Local Area Networks I
COURSE NAME

CSN202
CODE NO.

I. COURSE DESCRIPTION:

Students will develop an understanding of networking fundamentals, local area networks, related standards, current implementations and future trends. The study of Network Operating Systems is begun in this course, with the primary focus on Novell Netware. Developing practical skills in LAN installation and administration, primarily in a Netware environment is an important objective.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

A. Learning outcomes:

1. Compare various local area network types, media, hardware components and associated standards and applications, enabling appropriate selection from among alternative technologies.

2. Perform local area network administration tasks in support of users and applications on a Netware network.

3. Compare various metropolitan and wide area networks, associated standards and services, enabling appropriate selection from among available alternatives.

4. Compare inter-networking techniques and devices used in enterprise or backbone networks so that effective selection and upgrade planning may occur.

5. Manage networks with proper consideration for security, performance, and troubleshooting.

B. **Learning Outcomes and Elements of the Performance:**

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

1. *Compare various local area network types, media, hardware components and associated standards and applications, enabling appropriate selection from among alternative technologies.*

Elements of the Performance:

- Compare common LAN topologies.
- Specify LAN components required for different types of LANs.
- Compare Ethernet (IEEE 802.3), Token Ring (IEEE 802.5) and other LAN implementations to enable appropriate selection.
- Identify the factors which improve the performance of a LAN.
- Compare Network layer protocols and routing methods.

This learning outcome will constitute approximately 20% of the course.
Reference:

2. Perform local area network administration tasks in support of users and applications on a network.

Elements of the Performance:

- Perform day-to-day network administrator tasks including installation and configuration of Netware 3.x and 4.x.
- Manage users and resources on a Novell Netware-based LAN.
- Plan and manage resources in a Novell Directory Services Directory Tree.
- Utilize the Internet to support network management tasks.

This learning outcome will constitute approximately 50% of the course.
References:

3. Compare various metropolitan and wide area networks, associated standards and services, enabling appropriate selection from among available alternatives.

Elements of the Performance:

- Compare WAN and MAN telecommunications services: Dialed-circuit services, Dedicated Circuit services, Switched Circuit services, and Packet Switched Networks.
- Select and improve MAN/WAN services for utilization within an organization.

This learning outcome will constitute approximately 10% of the course.
Reference: Chap 9 (F & D)

4. Compare inter-networking techniques and devices used in enterprise or backbone networks so that effective selection and upgrade planning may occur.

Elements of the Performance:

- Identify and specify inter-networking devices used in backbone or enterprise networks including hubs, bridges, switches, routers, and gateways.
- Compare alternatives for high-speed interconnection and upgrade options in backbone networks.

This learning outcome will constitute approximately 10% of the course.
Reference:

5. Manage networks with proper consideration for security, backup, documentation, performance, and troubleshooting.

Elements of the Performance:

- Evaluate risks to network security and implement controls.
- Prevent disruption to networks by knowing the requirements and tools used for backup, documentation, performance analysis and troubleshooting.

This learning outcome will constitute approximately 10% of the course.
References:

III. TOPICS TO BE COVERED:

1. Introduction to Local Area Network topologies, types and protocols.
2. Novell Netware Network architecture and management introduction.
3. Novell Netware 4.1 and NDS, Novell Directory Services.
4. Backbone Networks.
5. Network Security.

IV. REQUIRED STUDENT RESOURCES/TEXTS:

TEXT BOOK:

- **"Business Data Communications and Networking" (6th Edition)**

by Jerry Fitzgerald and Alan Dennis [Also used in CSN200]
(John Wiley and Sons, 1998)

- **"Network Administrator, Netware 4.1"**

by Ted Simpson , David Auer, and Mark Ciampa (Course Technology, Inc 1997, ITP)

V. EVALUATION PROCESS/GRADING SYSTEM:

3 WRITTEN TESTS	60%
LAB PROJECTS/ASSIGNMENTS	40%

(The percentages shown above may vary slightly if circumstances warrant.)

NOTE: *It is necessary to pass both the theory and the lab part of this course. For example, it is not possible to pass the course if a student has a failing average in the three written tests but is passing the lab portion, (or vice versa).*

complete assignments.

The nature of the upgrading requirements will be determined by the instructor and may involve one or more of the following: completion of existing labs and assignments, completion of additional assignments, individual parts of the course or a comprehensive test on the entire course.

LABS:

Lab activities represent a very important component of this course. Because of this, **attendance is mandatory** and the satisfactory completion of all lab activities is required. *It is the student's responsibility to discuss absences from regularly scheduled labs with the instructor so that alternate arrangements (where possible) can be made to complete the lab requirements.*

LAB REPORTS

Required lab report requirements will be detailed before labs are assigned.

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 instructor.

VI. SPECIAL NOTES:

- **Special Needs**
  Students with special needs (e.g. physical limitations, visual or hearing impairments, or learning disabilities) are encouraged to discuss any required accommodations confidentially with the instructor and/or contact the Special Needs Office so that support services can be arranged.

- **Retention of Course Outlines**
  It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other post-secondary institutions.

- **Course Modifications**
  Your instructor reserves the right to make reasonable modifications to the course as deemed necessary to meet the needs of students or take advantage of new or different learning opportunities.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced standing in the course should consult the instructor. This course is not eligible for challenge at the present time.