SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON

COURSE OUTLINE

Course Title: Wide Area Networks II

Code No.: CSN301 Semester: 5

Program: Computer Network Technology

Author: Mark Allemang

Date: Sept. 2000 Previous Outline Date: Aug. 1998

Approved: _____ _____
Dean Date

Total Credits: 6 Prerequisite(s): CSN204
Length of Course: 16 WKS Total Credit Hours: 96

I. COURSE DESCRIPTION:

This course is a continuation of CSN204 WANS I. Current topics in internetworking will be studied with the use of case studies, research involving resources on the Internet and presentations. At the present time, this course will cover Cisco CCNA semester 1 – "Network Fundamentals", and Semester 2 – "Routing and router configuration."

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

A. Learning outcomes:

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

1. Refer to the Course Outline for CSN207 for the objectives of CCNA Semester 1.
2. Describe the components and operation of a router.
3. Configure routers to be used in both WANS and LANS.
4. Describe the characteristics of various routing protocols..
5. Build and troubleshoot networks.

B. Learning Outcomes and Elements of the Performance:

1. Complete Cisco CCNA Semester 1.(refer to CSN207 for details).

This learning outcome will constitute approximately 25% of the course.
Reference: Text Chapt. 1-4, 6-7

2. Describe the components and operation of a router

Elements of the Performance:

- List the components of a router and describe their purpose.
- Describe how routing occurs using IP as the routed protocol
- Describe the operation of a router in a WAN and LAN

This learning outcome will constitute approximately 15% of the course.
Reference: Text Chapt. 5.

3. *Configure routers to be used in both WANS and LANS.*

Elements of the Performance:

- List and describe the various IOS user and privileged mode commands.
- Configure a router from its "out of the box" condition to become a functioning router in an internetwork
- Configure a router for both static and dynamic routing table updates
- Perform various tests in order to verify the operation of the routers in a network
- Configure a router and server to download the router image from a TFTP server
- Troubleshoot various network problems

This learning outcome will constitute approximately 40% of the course.
Reference: Text Chapt. 5,10

4. Describe the characteristics of various routing protocols such as RIP and OSPF.

Elements of the Performance:

- Describe why routing protocols are necessary
- Describe the characteristics of link state(LS) and distance vector(DV) and hybrid routing protocols
- Identify the advantages and disadvantages of LS and DV routing protocols

Reference: Text Chapt. 9

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

5. *Build and troubleshoot networks.*

Elements of the Performance:

- Connect routers using both LAN and WAN interfaces to build internetworks to satisfy particular requirements
- Configure the routers and assign appropriate IP addresses
- Troubleshoot various faults within the networks.

This learning outcome will constitute approximately 20% of the course.
Reference: Text Chapt. 8

III. TOPICS TO BE COVERED:

1. CCNA Semester 1 Topics (as in CSN207)
2. Router components and configuration
3. IOS images and backup of system files
4. Routing protocols
5. Network troubleshooting

IV. REQUIRED STUDENT RESOURCES/TEXTS:

TEXT BOOK:

- **"CCNA CERTIFICATION – ROUTING BASICS FOR CISCO CERTIFIED NETWORK ASSOCIATES EXAM."**

by Robert N. Myhre (Prentice Hall 1999)

V. EVALUATION PROCESS/GRADING SYSTEM:

Online Cisco Chapter exams	10%	
Block Tests	20%	
Final Cisco Exam	20%	
Practical Tests		10%
Lab Activities		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 written tests but is passing the lab portion, (or vice versa).*

GRADING SYSTEM

A+	90	-	100%
A	80	-	89%
B	70	-	79%
C	60	-	69%
R	Repeat		Less than 60%

X Incomplete

UPGRADING OF INCOMPLETES

When a student's course work is incomplete or final grade is below 55%, there is the possibility of upgrading to a pass when a student meets all of the following criteria:

1. The students attendance has been satisfactory.
2. An overall average of at least 45% has been achieved.
3. The student has not had a failing grade in all of the theory tests taken.
4. The student has made reasonable efforts to participate in class and 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, re-testing on 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.