SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE:	Network Security		
CODE NO. :	CSN208	**SEMESTER:**	4
PROGRAM:	Computer Network Technician /Technology		
AUTHOR:	Mark Allemang, Bazlur Rasheed		
DATE:	Jan, 2008	**PREVIOUS OUTLINE DATED:**	Jan, 2007
APPROVED:			
	_____		_____
	CHAIR		**DATE**
TOTAL CREDITS:	5		
PREREQUISITE(S):	CSN120		
HOURS/WEEK:	4		

I. COURSE DESCRIPTION:

This course provides an in-depth study of network security issues, standards, best practices and current threats. Supported by extensive lab work, system vulnerabilities will be investigated and solutions implemented using a variety of operating systems and security tools.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Understand network security principles and develop strategies for dealing with common network vulnerabilities and security issues.

Potential Elements of the Performance:

- Understand the need for network security and the tradeoffs associated with implementing security.
- Practice ethical behaviour as a network administrator.
- Identify legal issues associated with network administration and implement a security policy for network users to follow.
- Identify general security issues associated with LANs, WANs, Web Servers, VPNs and Remote Access.
- Identify and defend systems against the major types and categories of security threats.
- Implement virus protection and recovery practices on a network.
- Implement security policies and practices that lead to secure networks.

2. Deploy firewalls to secure a network

Elements of the Performance:

- Compare different types of firewalls with respect to their principles of operation, their strengths and weaknesses.
- Specify and configure various firewall products to meet particular network requirements.
- Evaluate and compare various commercial firewalls.

3. Establish security practices to enable local and remote users to connect securely to internal networks.

Elements of the Performance:

- Compare dial-in networking services (RAS), VPNs and other Internet services with respect to their operation and security issues.
- Implement RAS or VPNs enabling secure remote access.
- Implement authentication and password policies that are appropriate for particular situations.

4. Analyze network requirements and plan security based on those requirements

Elements of the Performance:

- Analyze security requirements and be able to specify services, operating systems, and protocols appropriately.
- Identify the steps required to secure your network servers.
- Identify typical methods of securing network services including web and email
- Identify security issues and then implement appropriate security on Windows servers.
- Identify security issues and then implement appropriate security on Unix systems
- Implement security for workstations and common desktops.

5. Develop Intrusion Detection and Response best practices.

Elements of the Performance:

- Describe the various types of intrusion detection systems.
- Compare commercial intrusion detection systems and implement one.
- Develop a security plan and an intrusion response procedure for situations where a site has been attacked.
- Investigate real case studies of network attacks, intrusion detection and recovery.

6. Specify and implement appropriate tools, utilities and practices to prevent/recover from security attacks/intrusions.

Elements of the Performance:

- Use Internet resources to research current security threats and acquire needed software and security patches.
- Use various utilities such as network monitors, packet sniffers, security scanners, intrusion detection systems, password detectors, auditing and integrity checking to protect servers and network resources.

III. TOPICS TO BE COVERED:

1. Security Fundamentals and Common Vulnerabilities
2. Firewalls
3. Server and Workstation Security
4. Security Planning and Policies
5. Intrusion Detection and Response
6. Security Tools and Best Practices

IV. REQUIRED STUDENT RESOURCES/TEXTS:

TEXT BOOK: CompTIA Security + Exam JK0-010 Study Guide and Practice Exam by Syngress.
ISBN: 978-1-59749-153-2

V. EVALUATION PROCESS/GRADING SYSTEM:

Tests and Quizes	60%
Labs and Assignments	40%

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

NOTE: ***It is necessary to pass both the theory and the lab parts of this course.*** *It is not possible to pass the course if a student has a failing average in the quizzes and tests but is passing the lab portion (or vice versa).*

The professor reserves the right to adjust the mark up or down 5% based on attendance, participation, leadership, creativity and whether there is an improving trend.

A minimum of **80% attendance** required in the labs and lectures.

- All Assignments must be completed satisfactorily to complete the course.
- Late hand in penalties will be 10% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
- Makeup Tests are at the discretion of the instructor and will be assigned a maximum grade of 50%.
- 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.

NOTE: If action is to be taken, it will range from marks being deducted to a maximum of removal from the course.

The following semester grades will be assigned to students in postsecondary courses:

Grade	*Definition*	*Grade Point Equivalent*
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	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:

Special Needs:
If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 2493 so that support services can be arranged for you.

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 postsecondary institutions.

Communication:
The College considers ***WebCT/LMS*** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the ***Learning Management System*** communication tool.

Plagiarism:
Students should refer to the definition of "academic dishonesty" in *Student Rights and Responsibilities*. Students who engage in "academic dishonesty" will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:
The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.