

# Course Syllabus

## SEC-350, Section 51 – Securing Enterprise Networks

<b>Time &amp; Location</b>	Thursday, 5:30pm – 8:15pm Skiff Annex, Room 100 (SKFA 100)
<b>Instructor</b>	Robert Mount rmount@champlain.edu 802-343-8808
<b>Office Hours</b>	Before class in Skiff 100 or by appointment
<b>Course Website</b>	<a href="http://netcaptive.net/sec350">http://netcaptive.net/sec350</a>
<b>Textbook</b>	<i>Guide to Firewalls and Network Security, Second Edition</i> Whitman, Mattord, Austin, and Holden ISBN 10: 1-4354-2016-0
<b>Prerequisites</b>	SEC-335 Software & Web Site Security

### Course Description

[From the course catalog] Students will examine network-based attacks, whether originating from the Internet or the local LAN, and learn about ways to protect, detect, and defend the enterprise network from such attacks. The relationship between user network policy and securing the network will also be explored. Students will participate in hands-on experiments and demonstrate their understanding of subject matter via writing and presentations. (3 Credits)

### Course Objectives

Course participants will be exposed to a wide range of topics relating to routers, routing protocols, security, network design, network management, and industry best practices. By the end of the semester, students who attend class and complete the assigned coursework will be able to:

Understand, configure, and troubleshoot:

- Security Assessment for Enterprise Networks
- Vulnerabilities in Enterprise Networks
- Security and Standard Network Devices
- Security Appliances
- Security Policies in the Enterprise Network
- Network Monitoring
- Logfile Analysis
- Incident Detection and Impact assessment
- Firewall Planning and Design
- Firewall Configuration and Administration
- Encryption
- Packet Filtering
- Proxy Servers
- Authentication
- Virtual Private Networks (VPNs)
- Authentication
- Introduction to Intrusion Detection Systems (IDS)
- Introduction to Adaptive Security Appliances

### Instructional Strategies

This course is comprised of the following instructional approaches:

#### Lectures and Discussion

Lectures will be used to outline the technology subject(s) for the day. Lectures will focus on the overall technology concepts as students will use these scenarios to further their understanding of the technology. Informal discussions may occur throughout the class time as deemed necessary by the instructor to clarify a technology, assist in configuration troubleshooting, or answer student questions.

## **Labs**

There are hands-on labs as part of this course. Some class time will be spent configuring equipment to reach a particular goal or set of goals outlined in the day's scenario. While the instructor is always available to provide guidance toward design, configuration, and troubleshooting, students are expected to be active in their approach toward solving lab scenarios.

## **Readings**

Students will be required to read the course textbook. Additional readings may be given if deemed appropriate. Occasionally, optional readings will be suggested for students that wish to research a particular topic in greater detail.

## **Assignments**

Students will occasionally be given research-oriented homework assignments that cover material presented in class and in the assigned readings. These assignments will be submitted in written form, and may be presented and/or discussed in class.

## **Exams**

Students will be given both a mid-term and final exam that will include a written portion and a graded lab scenario incorporating several technologies covered in the course up to that point. Successful application of the principles, approaches, and concepts learned in class will be given precedence, as well as a demonstration of an understanding of the underlying technologies.

## **Addressing Core Competencies**

This course contains elements that address the seven core competencies as outlined by Champlain College:

### **Critical Thinking/Quantitative Literacy**

The lab scenarios, assignments, research, readings, and exams in this course require both critical thinking and quantitative literacy to be successfully completed. The importance of critical thinking will be highlighted when discussing and evaluating technology decisions during the lecture portion of this course and configuring the associated technologies in the lab scenarios. The significance of quantitative literacy will be emphasized when performing course research and completing reading assignments.

### **Writing**

All assignments, quizzes, and exams will contain sections that require coherent, cohesive writing skills. Furthermore, because competent writing is also a fundamental workplace requirement, students are expected to follow proper grammar, punctuation, spelling, and style conventions when completing assignments.

### **Ethical Reasoning**

Many technology issues have multiple ethical dilemmas associated with them. In this course students may discuss and debate the ethical merits of various technologies, practices, and methodologies during participation in class and on the course email list.

### **Oral Communication**

The critical skill of coherent oral communication will be highlighted during class discussions and through students working together to achieve a solution to lab scenarios.

### **Technology Competency**

This course will provide students with a detailed understanding of many different technologies. *See the course objectives for more detail on this item.*

### **Global Studies**

All of the topics discussed in this course are of global importance and impact. In some cases, the international aspects of a particular topic may be highlighted to further enrich the students' understanding of that topic in lecture and on the course email list.

## **Course Policies**

This course uses the following policies and procedures:

### **Grade Calculation**

Students' final grades will be calculated according to the following list:

Class participation	25%
Assignments	25%
Quizzes	10%
Midterm Exam	20%

Final Exam 20%

### Attendance

Because this is a once a week course (with labs), attendance is critical. If you are unable to attend a class, you are responsible for any material or assignments missed during your absence. *If you miss too many classes you will receive a failing grade.*

### Homework

Homework assignments are due on the day of class the following week, unless otherwise noted. Assignments may be printed/written and handed in, or emailed to the instructor by midnight (EST) of their due date. **Late assignments will be penalized by 50%.**

### Quizzes/Exams

Students are required to take all quizzes and exams at the scheduled time unless arrangements are made with the instructor prior to the quiz or exam. Make-up quizzes exams will be scheduled at a time convenient for the instructor. *Because the class works together on lab portions or exams, you will be docked points for being tardy to any exam.*

### Academic Honesty

Any assignment, quiz, or exam in which the instructor suspects cheating, may be given a zero, according to the Champlain College student handbook. This policy will be strictly adhered to.

### Collaboration

Student collaboration is encouraged, and may be occasionally assigned. However, be aware of the academic honesty policy above, and make sure the work you hand in is truly your own.

### Email

From time to time, the instructor will send email to the class. Students are required by the school to check your email daily. Homework reminders, class cancellations, etc. may be communicated via email. If the instructor cancels or postpones class, you will receive an email to that effect by 3pm the day of class.

### Special Needs

If you believe that you have a disability requiring accommodations in this class, please contact the Coordinator of Support Services for Students with Disabilities as soon as possible. After you receive your accommodation form, please see me so I can work with you to implement them in a timely fashion. Contact:

Janine Allo, Coordinator of Support Services for Students with Disabilities  
jallo@champlain.edu  
802-651-5961  
Hauke 007I

## Course Schedule\*

Date	Topic	Reading	Homework	Notes
Sept 4	Course Overview/Introduction	Chapter 1		
Sept 11	Networking Refresher	Chapter 2		
Sept 18	Security Standards, Policies & Planning	Chapter 3		
Sept 25	Finding Network Vulnerabilities	Chapter 4		Lab
Oct 2	Firewall Planning and Design	Chapter 5		
Oct 9	Packet Filtering Firewalls	Chapter 6 Chapter 8		Lab
Oct 16	Packet Filtering Firewalls (cont) Midterm Review			Lab
Oct 23	MIDTERM			
Oct 30	Proxy Servers and Application-Level Firewalls	Chapter 7		

Nov 6	Encryption and Authentication	Chapter 9 Chapter 10		
Nov 13	Virtual Private Networks (VPNs)	Chapter 11		Lab
Nov 20	Virtual Private Networks (VPNs)			Lab
Nov 27	<b>** Thanksgiving Break</b>		Give Thanks	
Dec 4	Intrusion Detection Systems	Chapter 13		Lab
Dec 11	Review for Final	Chapter 12		
Dec 18	FINAL			

\*The most recent version of this schedule is always available at the course website:  
<http://netcaptive.net/sec350>