



UNIVERSITY OF
SOUTH FLORIDA

SARASOTA-MANATEE

Undergraduate Studies

**Program in
Information Technology**

CNT 3403

Network Security and Firewalls

Sections 521 & 522

Fall 2011

3 Credit Hours

University of South Florida – Sarasota/Manatee
8350 North Tamiami Trail, Sarasota, FL 34243
Telephone: 941-359-4200 Fax: 941-359-4367



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SARASOTA-MANATEE

Instructor Information

Instructor	Frederic B. “Rick” Walsh
Office Location	Viking 107 (by appointment only)
Office Hours	24/7 via BlackBoard Virtual Office
Phone Number	941-358-2001 Please allow time for 12 “Rings” while switching between a “landline”, cell phone, and finally voicemail.
E-mail	Please use Blackboard “ Course Messages ” for ALL Course Related communications.
Alternate E-mail	walshf@sar.usf.edu (non-course related communications only)

Course Information

Course Title	Network Security and Firewalls
Course Number	CNT 3403
Course Sessions	Tuesday & Thursday Day sessions – consult OASIS Schedule for times
Course URL	http://my.usf.edu

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Course Description

Computers connected to networks are vulnerable to a wide range of attacks: viruses, worms, phishing, spyware, and Trojan horse. This course provides the information needed to protect networked computers and their stored data. As such, it takes a comprehensive view of the types of attacks that are launched against networks and computer systems, examining network and computer security defense mechanisms, and offering practical tools, tips, and techniques to counter attackers.

Course Goals

This course is intended to meet the needs of students and professionals who want to master practical network and computer security. As such, it takes a comprehensive view of the types of attacks that are launched against networks and computer systems, examines network and computer security defense mechanisms, and offers practical tools, tips, and techniques to counter attackers.

Course Learning Objectives

Upon completion of this course, students will have knowledge concerning the following topics and an understanding of the relationships between them

- Understand the challenges of information security and why it is important.
- Be able to describe the four basic types of information security attacks: basic attacks, identity attacks, denial of service attacks, and malicious code attacks.
- Be able to explain the three pillars of information security: authentication, access control, and auditing.
- Know how to create a baseline point for information security.
- Understand how to secure a network, including the cable plant and removable media.
- Know how to protect e-mail systems.
- Know how to harden file transfer protocol and secure remote access to systems.
- Understand the practical uses of cryptography.
- Understand how to use public key infrastructure.
- Understand the importance of business continuity and planning for disaster recovery.
- Understand the importance and development of security policies.

Methods of Instruction

Student and instructor presentations, demonstrations, discussions, and hands-on use of computers to complete exercises and assignments.

Texts and Materials

Required Texts:

Network Security Fundamentals By Cole, et al.

- Wiley
- ISBN: 978-0-470-10192-6

Network Security Fundamentals Project Manual By Rachelle Reese

- Wiley
- ISBN: 978-0-470-12798-8

AND

Firewall Fundamentals (Paperback)

by [Wes Noonan](#) and [Ido Dubrawsky](#)

- Cisco Press; (1st edition)
- ISBN-10: 1587052210
- ISBN-13: 978-1587052217

Important Dates

Academic Calendar / Important Dates

FALL 2011

August 22	Fall, first day of classes
September 5	Labor Day - USF Holiday; no classes; offices closed
October 29	Last day to drop with a 'W'; no academic penalty, no refund
November 11	Veteran's Day - USF Holiday; no classes; offices closed
November 24 & 25	Thanksgiving Holiday - USF Holiday; no classes; offices closed
December 2	Fall, last day of classes
December 3 - 8	Final Exam Week
December 11	Fall, Sarasota-Manatee Commencement
December 23 – 26	USF Holiday – Offices closed
December 30 – 1/2	USF Holiday – Offices closed (Friday Dec. 30 th and Monday, Jan. 2)

BlackBoard and Elluminate Tutorials

Tutorials:

http://www.sarasota.usf.edu/Academics/DE/current_students.php

Technical assistance

- Toll-free Helpline: 866-974-1222
- Live online help:

<http://usfsupport.custhelp.com/cgi-bin/usfsupport.cfg/php/enduser/chat.php>

Class Attendance Policies

Students in Fully On-line courses are NOT required to comply with the First Day Attendance Policy.

The first day attendance policy is not applicable to courses in the following categories: Fully On-Line Courses, Bachelor of Independent Studies (BIS), Educational Outreach, Open University (TV), FEEDS Program, Community Experiential Learning (CEL), Cooperative Education Training, graduate level courses and courses that do not have regularly scheduled meeting days/times (e.g., directed reading, independent study, thesis, dissertation).

Flex Attendsm Procedures

This class features **Flex Attendsm**, with each class session being recorded and available online throughout the semester. Students may “attend” **synchronously** (online during normal class hours), **asynchronously** (by viewing recorded class sessions afterward), or using **ANY** combination of these.

Educational research has found a strong positive correlation between class attendance and academic success. The student is advised to “attend” all class sessions via any convenient **Flex Attendsm** mode and not to fall behind in either “attendance”, nor in assignments and participation. It is a student’s responsibility to “attend” all class sessions by utilizing whichever **Flex Attendsm** modes the student finds convenient.

Attendance records are **NOT** utilized as a component when determining course grades. NO excuses are ever needed for attendance issues. **Flex Attendsm** recorded sessions are available for review or makeup of missed classes. Therefore, students who find themselves unable to “attend” any class session(s) for any reason including; religious observances, family obligations, emergencies, or employment, need **NOT** notify the instructor, or submit documentation.

Permission is not required for any student to share or sell notes or recordings of class sessions.

Religious Observances

Students who anticipate the necessity of being absent from class due to the observation of major religious observance are **NOT** required to provide notice of their absences, as all class sessions can be “made-up” via the **Flex AttendSM** recorded mode.

Emergencies

In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to Blackboard, Elluminate, Skype, and email messaging and/or an alternate schedule. It's the responsibility of the student to monitor Blackboard site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.

Emergency Preparedness

It is strongly recommended that you become familiar with the USF Sarasota-Manatee Emergency Action Plan on the Safety Preparedness site <http://www.sarasota.usf.edu/facilities/SafetyPreparedness.php>

- **1 (800) Hotline:** The USF hotline at 1 (800) 992-4231 is updated with pre-recorded information during an emergency. The hotline can also be operated by staff during an emergency if the situation necessitates that additional information, direction or resources need to be communicated and the personnel can be put in place in advance, such as in the event of a hurricane or ongoing emergency
- **Fire Alarm Instructions:**
At the beginning of each semester please note the emergency exit maps posted in each classroom. These signs are marked with the primary evacuation route (red) and secondary evacuation route (orange) in case the building needs to be evacuated.
- **Contingency Plans**
The University requires professors to have a contingency plan for continuing course instruction, if possible, in the event of continued natural disruption

(e.g., significant hurricane damage to the area or a pandemic affecting the area). Since all courses at USFSM are supported by Blackboard, the most feasible plan would be to move instruction more completely online. Also, advisable would be a plan to extend deadlines as appropriate.

http://www.sarasota.usf.edu/Academics/AcadAffairs/Handbook/USFSM_FH_EmergencyGuidelinesAcademicContinuity.pdf

Students with Special Needs

USF is committed to providing reasonable support for students with disabilities. Students with disabilities are responsible for registering with the Office of Students with Disabilities Services (SDS) in order to receive academic accommodations. Reasonable notice must be given to the SDS office (typically 5 working days) for accommodations to be arranged. It is the responsibility of the student to provide each instructor with a copy of the official Memo of Accommodation.

Contact Information: Pat Lakey, Coordinator, 941-359-4714,
plakey@sar.usf.edu, www.sarasota.usf.edu/Students/Disability/

Academic Dishonesty and Plagiarism

In accordance with university guidelines as found in the USF Student Handbook, anyone found cheating during exams, submitting work that is not their own, plagiarizing or falsifying work that is submitted to represent work they have done, shall receive an “F” grade with numerical value of zero on the item submitted, and the “F” shall be used to determine the final course grade. It is the option of the instructor to assign the student a grade of “F” or “FF” (the latter indicating dishonesty) in the course.

The instructor may use the “Safe Assignment” software within the BlackBoard system to access potential plagiarism and the obligation to reference all materials taken from electronic and other sources.

The University of South Florida has an account with an automated plagiarism detection service which allows instructors and students to submit student assignments to be checked for plagiarism. I reserve the right to 1) request that assignments be submitted as electronic files and 2) electronically submit assignments to SafeAssignment, or 3) ask students to submit their assignments to SafeAssignment through myUSF. Assignments are compared

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automatically with a database of journal articles, web articles, and previously submitted papers. The instructor receives a report showing exactly how a student's paper was plagiarized. For more information about SafeAssign and plagiarism, go to <http://www.c21te.usf.edu>. Click on Plagiarism Resources. For more information about USF's plagiarism policies, refer to USF's Undergraduate Catalog - page 46. <http://www.ugs.usf.edu/pdf/cat0809/cat0809.pdf>

Pursuant to the provisions of the Family Educational Rights and Privacy Act (FERPA), students are requested to maintain confidentiality as a way to keep their personal contact information (i.e. name, address, telephone) from being disclosed to vendors or other outside agencies. By your submission, you are also agreeing to release your original work for review for academic purposes to SafeAssign.

PLEASE REMOVE YOUR NAME FROM THE BODY OF YOUR PAPER AND REPLACE IT WITH YOUR USF ID#. ALSO REMOVE YOUR NAME FROM THE FILE NAME AND REPLACE IT WITH YOUR USF ID# (e.g., "U12345678") BEFORE SUBMITTING IT TO SafeAssign.

BE SURE TO READ ALL ANNOUNCEMENTS

SURVIVAL NOTES

Classmates - FYI

This Announcement/email is being sent to all my students to get everyone into the habit of using the "in-course" messaging system (COURSE MESSAGES tab) on the left panel of my Blackboard classes.

If you can't see the leftmost panel navigation buttons, it may have collapsed as the default. You are getting into the course, but you may just be seeing the announcements. On the left should be the menu, but if it has collapsed, open it back up. Use the small right facing ">" enclosed in a small TAB which is on the very left edge of the screen, about level with the first sentence of this announcement to expand the navigation menu.

Survival Notes

1. Fully On-Line Classes are EXEMPT from the First Day Attendance Rule.
2. This Class is fully on-line. (i.e. No Classroom)
3. You "attend" class in "real time" via Elluminate during actual class hours (Synchronously) **OR** later (hours, days, or weeks!) by viewing & listening to Elluminate Recordings (Asynchronously) OR "Mix & Match" to fit your job schedule, family obligations, religious holidays, conflicting class times, illnesses, Whatever! Therefore Written Excuses are never needed.
4. Class links become "hot" 1/2 hour before class times.
5. Recordings are created during each class & available throughout the semester, starting an hour or more after class ends, for asynchronous students and/or for review purposes. - N.B. If anyone exits a class without disconnecting properly, it can take up to 24 hours for the recording to appear. Therefore Synchronous students need to DISCONNECT from Elluminate by clicking the plug symbol at lower left of the session screen before exiting your browser!
6. **PLEASE Use Blackboard's MESSAGES rather than emails.**

Do not reply to this Email. Instead, your FIRST ASSIGNMENT is to send me a Blackboard "Course Message" confirming your typical attendance plans (synchronous, asynchronous, or both). All course-related communications should be sent via the Blackboard Course Messaging system. These messages do not get lost among Spam or filtered and blocked by the USF email filters! I hope this helps to explain why all course related messages need to go through Course Messages (a course-centric communications tool). I don't want anyone to think that I am "prematurely cranky", YET? :o)

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Also, Course Messages are routed into the correct course & are saved along with everything else done during the semester, when at the end of the semester the entire course is backed up & saved for 5 years.

Then Why am I sending this to you using the public USF email system? Because, you may not yet have the habit of checking for Course Messages. (hopefully the spam filters will not intercept this message to you!) Get into the habit of checking Course Messages at least daily. I try to read all your Course Messages, Discussion Forums, etc. at least every eight hours - 24/7!

So "get with the program" and send me your attendance plans ASAP via Course Messages.

By replying properly, you are proving you not only know how to read & write, and follow directions, but also know what I mean when I say "Use the Course Messaging system". Have I nagged you enough?

7. To find class & recording links - Click "Elluminate". Pull down "Live Sessions" or Recorded Sessions", and click on the Magnifying Glass symbol, THEN change the "mini-calendar" date to display the correct links. (under the mini-calendar, you can select Today, Week, or Month displays. Sometimes the Sessions/Recordings pull-down interacts with changes to the mini-calendar display and vice versa. Reselect display or Live Sessions/Recorded Sessions as needed.)

TUTORIALS FOR ELLUMINATE AND BLACKBOARD

http://www.sarasota.usf.edu/Academics/DE/current_students.php

http://www.sarasota.usf.edu/CampusComputing/Documents/CC_Student_Resources.php

Students needing technical assistance with Blackboard to the following resources:

Toll-free Helpline: 866-974-1222

Live online help: <http://usfsupport.custhelp.com/cgi-bin/usfsupport.cfg/php/enduser/chat.php>

8. Call me 10 min. before any class if you are having trouble logging in. 941-358-2001

9. IF/Whenever WE have technology problems, please keep trying for 30 minutes, and periodically check "Announcements" for "real-time" updates. MESSAGE me or call me if you solve the problem so that I can send Announcements to everyone.

10. N.B. We are all adults. I understand that "Life Happens". Do Yourself a favor! Don't Cheat (You will only be cheating yourself in the long run) AND Don't Lie to me. I can only use the TRUTH when

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trying to figure out how to work with you to accommodate your "emergency" or other "Real Life" problem.

11. Remember the motto on the front cover of "The Hitchhiker's Guide to the Galaxy" - "DON'T PANIC"

And remember to have fun with our class.

Here are some additional useful hints.

For fewer problems when using Blackboard Links, Don't just click on a link. **Right Click** then select "open in a new window" or "open in a new tab", then left click. Blackboard sometimes vomits pages of numbers if you just left click to follow a link to another page.

Setup Instructions before using Elluminate

If this is the first time you will be using Elluminate, you may be prompted to download some software which may take anywhere from 2 to 20 minutes depending upon your Internet connection speed. You can pre-configure your system with the required software by going to the support page located at:

<http://131.247.100.61:80/support.help> OR go to www.illuminate.com then click on "Support" on the left hand menu. Then follow steps 1, 2, & 3.

The most critical components for web conferencing systems and distance learning classes (Elluminate, WiZiQ, Skype, etc.) are quality audio devices, which prevent audio feedback, howling and echos, caused by Internet "round trip" delays.

Although a headset with a microphone is the minimum requirement, an echo-canceling speakerphone is **much more comfortable** and eliminates "Hat Hair". There is a low cost (<\$40) echo-canceling USB speakerphone (about the size of a deck of playing cards) which has been tested with the 32 & 64 bit versions of Windows XP, Vista, Windows 7, and Linux. It allows you to conveniently listen and speak while using Elluminate, WiZiQ, Skype, and similar web conferencing systems. Pictures and ordering info can be found in COURSE DOCUMENTS.

Possible reasons for Whiteboard Inactivity

The Elluminate session starts automatically up to 30 minutes before the class is scheduled to start, to allow students to log in early and test their equipment or practice with Elluminate. This first part may not exhibit activity or audio content until students or the instructor logs in.

The recording continues for up to a half an hour after the class is scheduled to terminate to allow students to ask questions at the end of the class. These endings may also exhibit inactivity. Inactivity within a course session is usually caused by the class taking a break or other interruptions.

If the PowerPoint or PDF presentations are too small to read or are missing due to a technical fault, please download your own copy of the presentation slides from the Course Documents folder and continue following along with the lecture audio.

USEFUL INFO

Student Pricing for Software which is not available through our MSDN AA site can be purchased from the USF Computer Store (NOT the bookstore)with approximate pricing can be found in "Course Documents".

IF THE SHOE FITS

http://www.youtube.com/watch?v=lpvgfmEU2Ck&feature=player_embedded

Get used to using a browser with an automatic spell checker. (FireFox, Chrome, etc.)

Copying your text into Word to make sure that you are using the correct "To, Two, or Too", or the correct "Their vs. There", etc.

FREE SOFTWARE

Dreamspark (info sometimes displayed when you log into MyUSF)

and

Open Office (Similar capabilities and file compatible with MS Office)
Lots of Open Office tutorials are available on the Internet

<http://www.openoffice.org/product/>

MSDNAA SOFTWARE SITE INSTRUCTIONS

Please refer to this COBA website for info & help regarding downloading free software. The instructions are basically the same for IT students.

web.usf.edu/blwarner/msdnaa

Your invitation email should have arrived or be arriving in a few days.

IT CLUB WEBSITE

WWW.USFITNETWORK.com

POWERPOINT NARRATION.... Directions

**Record a
narration during a presentation**

If you want to capture your own comments, the comments of your audience, or both during your presentation, you can turn on narration before you begin your presentation.

1. In Normal view, select the slide that you want to start the recording on.
2. On the **Slide Show** tab, in the **Set Up** group,

click **Record Narration** .

3.

Click **Set Microphone Level**, follow the directions to set your microphone level, and then click **OK**.

4. Do one of the following:

- To [embed \(embedded object: Information \(object\) contained in a source file and inserted into a destination file. Once embedded, the object becomes part of the destination file. Changes you make to the](#)

[embedded object are reflected in the destination file.\)](#)

the

narration, click **OK**.

- To link the narration, select the **Link narrations in** check box, click **Browse**, click a folder in the list, and then click **Select**.

5. If you selected the first slide to begin the recording on, go to step 6.

If you selected a different slide to begin the recording on, the **Record Narration** dialog box appears. Do one of the following:

- To start the narration on the first slide in the presentation, click **First Slide**.
- To start the narration on the currently selected slide, click **Current Slide**.

6. In Slide Show view, add your speaker comments along with any audience comments, and then click the slide to advance to the next slide. Repeat this process for all the slides in your presentation.

Tip To pause and resume the narration, right-click the slide, and then on the [shortcut menu \(shortcut menu: A menu that shows a list of commands relevant to a particular item. To display a shortcut menu, right-click an item or press SHIFT+F10.\)](#), click either **Pause Narration** or **Resume Narration**.

7. Click the black Exit screen.
8. The narration is automatically saved, and a message appears asking if you want to save the timings for the presentation as well. Do one of the following:
 - To save the timings, click **Save**.
Your slides appear in Slide Sorter view, with the slide timings shown below each slide.
 - To cancel the timings, click **Don't Save**.

Record comments on a slide

1. In Normal view, click the slide that you want to add a comment to.
2. On the **Insert** tab, in the **Media Clips** group, click the arrow under **Sound**, and then click **Record Sound**.

3. To record the comment, click **Record**, and start speaking.
4. When you are finished recording, click **Stop**.
5. In the **Name** box, type a name for the sound, and then click **OK**.

A sound icon
appears on the slide.

Set the slide timings manually

Office PowerPoint 2007 will automatically record your slide timings when you add narration or you can manually set the slide timings to accompany your narrations.

1. In Normal view, click the slide that you want to set the timing for.
2. On the **Animations** tab, in the **Transition To This Slide** group, under **Advance Slide**, select the **Automatically After** check box, and then enter the number of seconds that you want the slide to appear on the screen.

Repeat the process for each slide that you want to set the timing for.

Tip If you want the next slide to appear either when you click the mouse or automatically after the number of seconds that you enter — whichever comes first — select both the **On Mouse Click** and the **Automatically After** check boxes.

Turn the slide timings off

Turning off the slide timings does not delete them. You can turn the timings back on at any time without having to recreate them. However, when the slide timings are turned off, your slides will not automatically advance when you record a narration, and you will need to manually advance the slides.

1. In Normal view, on the **Slide Show** tab, in the **Set Up** group, click **Set Up Slide Show**.
2. Under **Advance slides**, click **Manually**.

Tip To turn the timings back on, under **Advance slides**, click **Using timings, if present**.

Grading and Evaluation

Student performance will be evaluated based on participation, exercises and assignments, and tests including a mid-Term and a Final examination. Grades are assigned using the official University of South Florida grading system, including plus & minus grades.

The Mid-Term Exam counts as 40% of the exam points

The Final Exam counts as 60% of the exam points

Participation via Blackboard Forums is included when determining your grade.

Late assignments may receive reduced credit. The amount of any credit reduction will be proportional to the “lateness” of the assignment.

Opportunities for Extra Credit may be discussed during class sessions.

Course Schedule

Deviations to the following schedule can be expected in order to properly accommodate and respond to students’ questions, interests, and requests.

Week	Assignments	Chapter
1 & 2 -Course Orientation	Read & Review Chapter 1	1
3 - Fundamentals of Network Operating System -Evolution of Network Operating Systems -Network Operating Systems	Read & Review Chapters 2 & 3	2 & 3
4 - Network Fundamentals	Read & Review Chapter 4	4
5 - Type of Networks -Client/Server Concepts	Read & Review Chapters 5, 6, & 7	5, 6, & 7

6 - The Internet and Network Security - Wireless Security	Read & Review Chapter 8	8
7 -	Read & Review Chapter 9	9
8 Midterm -	Midterm Read & Review Chapter 10	1-9 10
9 -	Read & Review Chapter 11	11
10 -	Read & Review Chapter 12 & 13	12 & 13
11 --	Read & Review Chapter 14	14
12 -	Review PowerPoint slides	
13 - -	Review PowerPoint slides	
14 -	Review PowerPoint slides	
15 -Review Session	Review	
16 Final Exam	Final Exam	Everything