

Nova Southeastern University
Graduate School of Computer and Information Sciences

DCIS 830 – Research in Network Security (4 credits)
Fall 2009 (August 28 – December 13, 2009)

Professor

James Cannady, Ph.D.

Email: cannady@nova.edu (preferred method of communication)

Home Page: <http://www.nova.edu/~cannady>

Mobile Phone: (706) 248-4250

Course Description

Students pursue a research project on a current topic in network security. Topics of current interest include wireless security, intrusion detection, cryptographic theory and applications, enhanced authentication and access control measures, and malicious code detection.

Course Outline

This course will include the following areas beyond familiarity with basic security concepts:

- Security policies
- Best practices for security
- Planning for security
- Operation security
- Auditing and evaluation of security
- Research directions in information security management

Instruction Methods and Tools

The following on-line tools will be used in the course:

WebCT - The WebCT web-based interface will be used by the student to submit all course assignments. The instructor will provide assignment grades through WebCT and all broadcast messages through the “Course Announcements” forum.

Email – Electronic mail will be used in the course by the instructor to notify students of course-related issues and requirements during non-cluster periods. Students will use email for all questions, concerns, or issues addressed to the instructor during the course. All correspondences via email will utilize the students NSU email account. Students should check their NSU email daily.

Assignments

The objective of this exercise is to provide students with the experience of conducting research and writing an article on network security for submission to a peer reviewed journal. The project involves the submission of a preliminary report and the final paper.

Assignment	Value	Assignment Details
1	10%	<p>Preliminary Report The preliminary report should be in the form of a research plan. The preliminary report should address the following issues:</p> <ol style="list-style-type: none">1. Problem addressed<ul style="list-style-type: none">• Clearly state the research problem that you plan to address. This needs to be a restatement of the selected problem in your own words.2. Prior research<ul style="list-style-type: none">• Briefly discuss the body of literature that is used to motivate the research. Emphasize the shortcomings in the prior literature that you plan to address.3. Significance<ul style="list-style-type: none">• Explain why you think your work makes a contribution to the field. Cite references wherever possible to establish that there is a consensus among researchers that the problem addressed in the article is indeed an important one.4. Methodology<ul style="list-style-type: none">• Discuss the methodology you plan to use for the study. Justify the appropriateness of the selected methodology. Be as precise as you can. Identify the knowledge representation scheme and the search strategy where appropriate.5. Target Publication<ul style="list-style-type: none">• Provide the name of the conference proceeding or journal that you will target for your final report. <p>The preliminary report should be no more than five pages long.</p> <p>Due: 11:55 pm ET 09/20/09</p>

Assignment	Value	Assignment Details
2	90%	<p>Final Report</p> <p>This is the final manuscript that you plan to submit to the targeted journal. You should use the style, format, and page length that is appropriate for the journal, (note: the use of the GSCIS Idea Paper format is not acceptable). A suggested guideline for the article is presented below. Note that this is just a suggested outline and that your article need not have the same structure.</p> <ol style="list-style-type: none"> 1. Introduction <ul style="list-style-type: none"> • Provide the necessary background and discuss the relevant literature to motivate the research problem that your article addresses. 2. The Problem <ul style="list-style-type: none"> • Discuss the problem in detail and formulate it a manner that makes it tractable. 3. The Method <ul style="list-style-type: none"> • Describe the method used to address the problem. Justify the approach that you have adopted. 4. Results <ul style="list-style-type: none"> • Present the significant results of your study and relate it to the existing literature. 5. Conclusion <ul style="list-style-type: none"> • Summarize and highlight the significant contributions of your work. Identify potential limitations of the study and suggest areas of research that can address these limitations. <p>Due: 11:55 pm ET 12/13/09</p>

Grading Criteria

Grade	% Required
A	95%
A-	90%
B+	87%
B	84%
B-	80%
C+	77%
C	74%
C-	70%
F	< 70%

Course Rules

1. All assignments must be submitted to WebCT by 11:55 pm (ET) on the assigned due date. Students submitting their assignment after 11:55 pm (ET) on the due date will receive a 24 hour grace period to submit their assignment. However, there will be a 25% penalty assessed for assignments submitted during the grace period. No assignments will be accepted after the end of the grace period, except in extraordinary circumstances AND with the prior approval of the instructor before the original deadline.
2. All student submissions must be properly encrypted using Dr. Cannady's PGP Public Key. **Improperly encrypted submissions will not be graded.**
3. All class assignments must be submitted via [WebCT](#). The acceptable formats are PDF, ZIP, ASCII text, postscript, and Microsoft Word.
4. Students are encouraged to discuss and share information pertaining to this course. However, all submitted work must be original and must be your own.
5. A student may not do additional work or repeat an examination to raise a grade.

School and University Policies and Procedures:

Students must comply with the policies published in the school's *Graduate Catalog* and the *NSU Student Handbook*, some of which are included or referenced below. The catalog is at http://www.scis.nova.edu/NSS/pdf_documents/Catalog.pdf . The handbook is at <http://www.nova.edu/cwis/studentaffairs/forms/ustudenthandbook.pdf> .

1. Standards of Academic Integrity For the university-wide policy on academic standards, see the section Code of Student Conduct and Academic Responsibility in the *NSU Student Handbook*. Also see the section Student Misconduct in the GSCIS catalog.

Each student is responsible for maintaining academic integrity and intellectual honesty in his or her academic work. It is the policy of the school that each student must:

- Submit his or her own work, not that of another person
- Not falsify data or records (including admission materials and academic work)
- Not engage in cheating (e.g., giving or receiving help during examinations; acquiring and/or transmitting test questions prior to an examination; or using unauthorized materials, such as notes, during an examination)
- Not receive or give aid on assigned work that requires independent effort
- Properly credit the words or ideas of others according to accepted standards for professional publications (see the next section *Crediting the Words or Ideas of Others*)

- Not use term paper writing services or consult such services for the purpose of obtaining assistance in the preparation of materials to be submitted in courses or for theses or dissertations
- Not commit plagiarism (*Merriam-Webster's Collegiate Dictionary* (2004) defines plagiarism as “stealing or passing off ideas or words of another as one’s own” and “the use of a created production without crediting the source.”) (see *Crediting the Words or Ideas of Others* below)

Crediting the Words or Ideas of Others

When using the exact words of another, quotation marks must be used for short quotations (fewer than 40 words), and block quotation style must be used for longer quotations. In either case, a proper citation must also be provided. *Publication Manual of the American Psychological Association, Fifth Edition*, (2001, pp. 117 and 292) contains standards and examples on quotation methods.

When paraphrasing (summarizing, or rewriting) the words or ideas of another, a proper citation must be provided. (*Publication Manual of the American Psychological Association, Fifth Edition* (2001) contains standards and examples on citation methods (pp. 207–214) and reference lists (pp. 215–281)). The *New Shorter Oxford English Dictionary* (1993) defines paraphrase as “An expression in other words, usually fuller and clearer, of the sense of a written or spoken passage or text...Express the meaning (of a word, phrase, passage, or work) in other words, usually with the object of clarification...”. Changing word order, deleting words, or substituting synonyms is not acceptable paraphrasing—it is plagiarism, even when properly cited. Rather than make changes of this nature, the source should be quoted as written.

Original Work

Assignments, exams, projects, papers, theses, dissertations, etc., must be the original work of the student. Original work may include the thoughts and words of others but such thoughts or words must be identified using quotation marks or indentation and must properly identify the source (see the previous section *Crediting the Words or Ideas of Others*). At all times, students are expected to comply with the school’s accepted citation practice and policy.

Work is not original when it has been submitted previously by the author or by anyone else for academic credit. Work is not original when it has been copied or partially copied from any other source, including another student, unless such copying is acknowledged by the person submitting the work for the credit at the time the work is being submitted, or unless copying, sharing, or joint authorship is an express part of the assignment. Exams and tests are original work when no unauthorized aid is given, received, or used before or during the course of the examination, reexamination, and/or remediation.

2. Writing Skills

Students must demonstrate proficiency in the use of the English language. Grammatical errors, spelling errors, and writing that fails to express ideas clearly will affect their grades and the completion of their academic programs. The faculty will not provide remedial help concerning grammatical errors or other writing difficulties. It is the student's responsibility to proofread and edit his or her work which, in both form and content, should be letter-perfect. Work that is not properly edited will be rejected. It is university policy that students must submit their own work, not that of another person. Consequently, they should refrain from using outside editors to redo their work.

3. Disabilities and ADA

NSU complies with the American with Disabilities Act (ADA). The university's detailed policy on disabilities is contained in the NSU *Student Handbook*. Student requests for accommodation based on ADA will be considered on an individual basis. Students with disabilities should discuss their needs with their academic advisors before the commencement of classes if possible.

4. Communication by Email

Students must use their NSU email accounts when sending email to faculty and staff and must clearly identify their names and other appropriate information, e.g., course or program. When communicating with students via email, faculty and staff members will send mail only to NSU email accounts using NSU-recognized usernames. Students who forward their NSU-generated email to other email accounts do so at their own risk. GSCIS uses various course management tools that use private internal email systems. Students enrolled in courses using these tools should check both the private internal email system and NSU's regular email system. NSU offers students web-based email access. Students are encouraged to check their NSU email account and their course management email daily.

5. The Temporary Grade of Incomplete (I)

The temporary grade of Incomplete (I) will be granted only in cases of extreme hardship. Students do not have a right to an incomplete, which may be granted only when there is evidence of just cause. A student desiring an incomplete must submit a written appeal to the course professor at least two weeks prior to the end of the term. In the appeal, the student must: (1) provide a rationale; (2) demonstrate that he/she has been making a sincere effort to complete the assignments during the term; and (3) explain how all the possibilities to complete the assignments on time have been exhausted. Should the course professor agree, an *incomplete contract* will be prepared by the student and signed by both student and professor. The *incomplete contract* must contain a description of the work to be completed and a timetable. The completion period should be the shortest possible. In no case may the completion date extend beyond 30 days from the last

day of the term for master's courses or beyond 60 days from the last day of the term for doctoral courses. The *incomplete contract* will accompany the submission of the professor's final grade roster to the program office. The program office will monitor each *incomplete contract*. If a change-of-grade form is not submitted by the scheduled completion date, the grade will be changed automatically from I to F. No student may graduate with an I on his or her record.

6. Grade Policy Regarding Withdrawals

Course withdrawal requests must be submitted to the program office in writing by the student. Requests for withdrawal must be received by the program office by the calendar midpoint of the course (see dates in the academic calendar in the catalog and program brochures or websites). Withdrawals sent by email must be sent from the student's assigned NSU email account. Requests for withdrawal received after 11:59 p.m. EST on the withdrawal deadline date will not be accepted. Failure to attend class or participate in course activities will not automatically drop or withdraw a student from the class or the university. Students who have not withdrawn by the withdrawal deadline will receive letter grades that reflect their performance in the course. When a withdrawal request is approved, the transcript will show a grade of W (*Withdrawn*) for the course. *Students with four withdrawals will be dismissed from the program.* Depending on the date of withdrawal, the student may be eligible for a partial refund (see the appropriate catalog section Refund Policy Regarding Withdrawals).

7. Acceptable Use of Computing Resources

Students must comply with the university's *Policy on Acceptable Use of Computing Resources* (see *NSU Student Handbook*).

8. Academic Progress, Grade Requirements, and Academic Standing

Students must be familiar with the school's policies that are contained in its catalog.

9. Student Research Involving Human Subjects

Students must be familiar with the university's policy (see paragraph in catalog).