

# COSC 555

## Network Security

### Semster Project

#### Goals

As one of the goals of this class is to prepare students to do research in network security, we will each be conducting a research project over the course of the semester. We will do this as if we were conducting a larger project for publications by:

- Finding a problem of interest to ourselves and the community
- Reviewing the literature that exists about the problem
- Hypothesizing about a solution to the problem
- Conducting experiments and/or analysis to determine the effectiveness of the solution
- Writing up the results of the experiment

The net result of the project will be a report that I will grade using the criteria we have been using for evaluating papers, so you should clearly address the following points:

- What problem are you trying to solve?
- What is your approach to solving it?
- How do you demonstrating that their approach works?
- What assumptions did the you make in writing the paper? Are they reasonable assumptions?
- Is the supporting evidence for the work strong or weak? How could it be improved?
- What problems are introduced or left unsolved? Is there a way to address the same problem with different assumptions?

#### Steps

Since this is a long term project, we will be dividing it into smaller parts to ensure that you get adequate feedback early on and have time to get help as needed.

- *Due: February 19th* **Project proposal**  
2-3 pages that clearly state what problem you want to solve, how you propose to go about doing it, why you believe it will work, and what you expect to learn studying it.
- *Due: March 5th* **Literature Review**  
2-3 page overview of past work in the area that includes analysis of the papers cited and an overview of the successes and failure in the area.
- *Due: April 2nd* **Progress Update**  
2-3 pages describing how your approach has been working out, what problems you have encountered, what changes to the approach you may need to make, and what you believe you have left.
- *Due: May 6th* **Final report**  
A 10-12 page paper similar in format to those we read in class with a full description of your work. It is appropriate to use material from earlier reports to put this together.

#### Ideas

I am open to most anything that interests you in network security. I would encourage you to do a couple of things to help find a project.

- Look through the rest of the papers for the semester, particularly in areas of interest to you. See if you want to try and solve some of the remaining problems.
- Look at the web pages of security researchers to see what they are working on, and more importantly, what resources they make available in terms of toolkits and data traces.
- Come by my office and talk to me! I bet we can find something to work on together.