

## **MINT 709 - Capstone project proposal**

The requirements for MINT 709 can be summarized as follows:

"Design, implementation and/or performance evaluation of a significant internetwork or internetworking component."

You should be thinking about how you might want to present yourself to potential employers once you finish your degree. You need to be thinking about this right from the time you apply for admission. First and foremost, you want people to value your general networking skills. Additionally, your report will give you a chance to show off your ability to solve a difficult problem, and communicate clearly. Your project report is something you can put on your personal Web site and offer as additional material for an interview once you complete your degree.

### **Project structure**

There are many ways to structure your capstone project. One format that is often very successful consists of a literature survey followed by an experiment or implementation.

Following this structure, first you do an initial literature survey (using proper library resources - this is not just a process of surfing the Web!). The outcome of this is a bibliography of previous work, your synopsis of it, and your observations on where you think further work needs to be done. For example, if you are interested in routing protocols for personal-area networks you would go to the scientific literature to see what has been proposed, select three or four of the most promising techniques for further reading, and summarize and critique them.

At this point you should have some idea of the relative strengths and weaknesses of the previous work, plus some ideas about what needs to be changed or explored further. With that in hand, you will be ready to write the document requested for admission. You're not absolutely tied to following this direction when you finally get around to registering for the project course. Technology may have changed dramatically by then, or your interests may have shifted, or both. The important thing for this proposal document is that you:

- demonstrate your ability to find a current internetworking problem,
- read and understand what has been written about possible solutions to that problem,
- evaluate those proposed solutions critically, and
- describe a proposed program of experimentation in the lab, or implementation in software or hardware that would enable you to test your ideas.

Please go ahead and assume you will have whatever networking resources you will require. If it looks like extra resources are needed on top of what we currently have in the lab, we will find a way to borrow, rent or purchase what you may need. Don't toss out an idea just because you don't think the resources will be available.

### **What to submit**

Please write a three to four page document with the following headings:

1. **Introduction** – describe the problem you want to solve, and tell me why it matters. Who would

care if you were able to offer a solution? Why do you think you can solve the problem with the skills you have now, and / or what new skills or knowledge do you need to acquire before you can solve it?

2. **Related literature** – write a two-paragraph summary of each publication you read to find out more about this problem and discover potential solutions. For each publication, in the first paragraph give a summary (four to five sentences at least) of the article **in your own words**. In the second paragraph, describe what you see as the strengths and weaknesses of the idea(s) in that particular publication. For each publication, be sure to give author name(s), title of the article, and specify where and when the work was published (magazine, scientific journal, white paper, etc.). Don't just copy material from your sources. I want to hear **your** thoughts, and see how well you can express them.
3. **Suggested solutions, experiments, or implementation tests** – describe which drawbacks or potential issues you are interested in, and then document how you would go about solving them (if you think you can), and / or how you would go about examining them more closely in order to understand them better. Describe any resources required for the work.
4. **Deliverables** – what artifacts would your project create? This might be just the final report. It could be a compendium of test data. Or it could be some software, hardware, or both.

**Make certain** the simple things are taken care of: your spelling and grammar should be flawless. Then make certain you address all four headings above thoroughly, in a clear and reasoned fashion. Your writing reflects your thinking, so if your writing is disorganized, then it is likely your thinking is too. Be thorough in your exploration of your selected problem, and in the material you select to read and review.

The limit for this document is three to four pages: no less than three pages, and no more than four, in 12-point font, single-spaced, not including any figures or illustrations you wish to add. For the final file, PDF format is preferred.