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Security Track Masters Thesis Guidelines

Monterey, California. Naval Postgraduate School

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The Center for INFOSEC Studies and Research

Security Track Master's Thesis Guidelines

August 2006

<http://c isr . n p s . n a v y . m i l>

Security Track Master's Thesis Guidelines

The requirements for a Computer Science master's degree are described in a variety of documents, including the following:

- Coursework:
 - http://www.nps.navy.mil/cs/Curriculum/degree_requirements.htm
 - <http://www.cisr.nps.navy.mil/mstrack.html>
- Thesis advisor, process and content:
 - Computer Science Department master's thesis policy:
http://cisr.nps.navy.mil/downloads/thesis_policy.pdf
 - The *Processing of Electronic Theses, Dissertations, MBA Professional Reports and Joint Applied Projects* website provides information you will need to submit your thesis electronically, including research office requirements, Thesis Preparation Manual, thesis templates, and where to go for help:
<http://www.nps.edu/Research/research1.html>

Supplementing these requirements, the generally accepted practices for performing thesis work in the CS Security Track are described below.

General Process

At least three academic quarters before you graduate, you need to start your thesis process.

1. Agree with an advisor on a topic and a set of (one or more) co-advisors and/or second readers.
2. Write up the topic as a thesis proposal.
 - a. See sample proposal:
http://cisr.nps.navy.mil/downloads/thesis_sample.pdf
 - b. State your thesis clearly in a topic sentence. Include this sentence in the "Area of Research" section. This is the hypothesis that your results will demonstrate.
 - c. Use the "Scope" and other sections to describe your project so that it is clear, to both you and your advisors/readers, when you have met the objectives of the thesis.

Note that the proposal is a starting point, to be taken in good faith, for a research effort. By its exploratory nature, the research may diverge from what has been planned in the proposal.

- d. Include “end of thesis” events in your schedule. Working backward from the time you plan to have your green sheet in hand, don't forget to make room for:
 - Days required for Dept Chair review
 - Days required for Advisor's review cycles

Remember that both your advisors and the Department Chair may have many theses to review. Do not expect a turn around of the thesis in a couple of hours or even overnight.

- e. Get the proposal reviewed by advisors and readers (see editing procedures below)
 - f. Obtain required signatures
3. Establish times and days for periodic meetings with advisors/readers. Meet approximately every two weeks throughout your thesis work. The thesis process is a team effort: expect to meet more often during the research portion of your effort (as opposed to the writing/reading portions). The level of participation of readers and co-advisors may vary from thesis to thesis, and is determined by the primary advisor.

Provide minutes of each meeting within 48 hours. Minutes should include, minimally:

- Decisions
 - Plans for next period, including action items for the student and the advisor(s).
 - Open issues
4. Submit written thesis sections for review, as they are written. Submitting more than one section at a time might result in long delays.

This is your thesis, and it is your responsibility to accept/reject/modify the review comments so that the document says what you want it to and what you believe in. Be sure to discuss with your advisors if, and why, you decide not to incorporate (at least in spirit) any technical or substantial editorial comment.

5. Obtain agreement from your advisor on the nature (e.g., positive, negative) and completion status of your principal research results (viz., the research portion of your work is done). Note that a successful thesis may describe results that are either positive or negative with respect to the thesis's topic sentence.
6. Work with advisors to establish the thesis distribution list. There will be a standard set of names on all distribution lists; however individual theses will include thesis-specific names selected by you and your advisors.

7. Work with your advisors to ensure that proper acknowledgements to sponsors of your studies and of the research appear in the thesis.

For students in the *Scholarship for Service* program, the following acknowledgement and disclaimer must appear in the thesis:

“This material is based upon work supported by the National Science Foundation under Grant No. (grantee must enter NSF grant number).”

8. “Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.” Finish the writing/review cycle for the entire document.
9. Obtain required signatures
10. Final tech transfer of thesis materials – *required for graduation*.
 - a. Provide thesis advisor with .doc or latex source as well as a .pdf copy of the completed thesis.
 - b. For theses that involve the generation of specifications, source code, etc., students need to coordinate with their advisor on its transfer to project-related archives. Sometimes this will involve working with members of the CISR research staff.
 - c. The thesis advisor will check the thesis materials in to CISR configuration management system, as is appropriate.
11. Exhale, or otherwise indulge in your favorite form of relaxation.

Editing Procedures

Editing procedures for the thesis proposal and the thesis proper are described below. Documents often are reviewed iteratively. Be prepared for at least three reviews of each document section: two for content and editing comments, and one for final approval.

1. Notify your reviewers several days ahead of time that a review is imminent.
 - a. Agree beforehand with advisors/readers whether they will review serially or in parallel.
 - b. Agree beforehand about the expected turn around time.
2. Submit hard copy for review. Also provide an electronic copy of each submission. For each non-initial review:
 - a. For each reviewer, attach his or her previous marked up copy. For serial reviews, attach all marked copies to the review package.
 - b. Use change tracking on your document to show how you responded to the comments from the immediately previous review; you should not preserve change markings from before that. For example, if you have already had two reviews and are sending the document around for (what you hope will

be) final approval, it would only show change markings resulting from your responses to the 2nd review. In MS Word, see:

Tools/Track_Changes/Highlight_Changes.

- c. Use the following naming convention for electronic files sent to advisors.
 - i. Thesis proposals: Proposal_<YourName>_<date>.doc
 - ii. Thesis or individual chapters:
 1. Thesis_<YourName>_<date>.doc
 2. Chpt_<#>_<YourName>_<date>.doc
 - iii. Use this format for the date: YYMMDD
3. Retrieve marked up copies. Save all marked up copies until you graduate.
4. Determine from the review comments and your advisor whether another review is required.

Other Advice

- Create a rational schedule. Plan to finish early: as things can go wrong, you will want to leave yourself a margin for error. Stick to your schedule.
- Take academic classes cautiously during the last quarter – a difficult class can distract from your ability to complete your thesis.
- Write your introduction section last, so you will not spend time revising it along the way.
- Attend one of the Research Office thesis trainings meetings that are given every quarter.
- Use the Word thesis template to get the right formatting from the start.
- Get a copy of the Thesis Preparation Manual and read it.
- When editing in response to a review, you may find it useful to check off reviewer's comments as you go through the document. This ensures completeness.
- For comparison, and other good ideas, the Systems Management Curriculum thesis guidelines can be found at:

http://www.nps.edu/Research/documents/thesis_prep_manual.doc