

## **CAAM 600: WRITING THE MASTER'S THESIS SPRING 2009: SYLLABUS (revised)**

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### **Goals:**

- Completion of a large portion of a coherent, accurate, and persuasive MA thesis that meets departmental standards and that clearly answers all Seven Key Questions;
- Development of oral presentation skills for delivery of a persuasive defense of the thesis with clear and sufficient explanations of your research;
- Ability to define and meet 4 professional expectations of the field.

**Logistics:** 3-hour course; class meets from 10:00 – noon on Fridays for 14 weeks in Duncan Hall 2014. Class attendance is mandatory. Additional conferences with Drs. Sorensen, Hewitt, and Symes will be scheduled.

**Prerequisite:** For the first class you must bring written approval of the thesis topic you and your advisor have agreed on. The topic must be precise, not vague. You cannot take the course without this written approval in place.

**Grading:** This course will be graded, with grades based on your written work, oral presentations, and class participation. Grades will be assigned jointly by the instructors. Unless you receive permission in advance for late submission, your grade will be lowered by one letter for each week the assignment is late (reduction prorated for parts of the assignment).

The final grade for the course will be based on satisfactory completion of the following:

- A near-final abstract
- A final and complete literature review
- A near-final methods section
- Drafts of a good portion of the results, discussion, conclusion, and introduction.

### **WEEK ONE: January 9**

1. **Course Overview:** syllabus, expectations, due dates, grading, attendance
2. Discuss the **CAAM departmental Guidelines for Evaluation of the thesis** (handout)
3. **Thesis Overview** (handout)
4. Discuss **Seven Key Questions** (handout); answer some of them informally in class by way of reviewing the approved thesis topics
5. Pointers on **Slide Design** (the LaTeX slide package vs. Powerpoint)
6. Discuss the **Checklist for Evaluating Visuals** (handout).

**ASSN:** 1. **Write out the answers to the Seven Key Questions.** Send electronic copies to Sorensen, Hewitt, and Symes and put a paper copy in our mailboxes by 5 p.m. on Thursday, January 15. Bring 3 copies to class. **Note:** Dr. Hewitt can open only Word or

pdf attachments. 2. **Prepare a 7-10 minute (maximum) oral presentation**, answering the Seven Key Questions for this class (smart and mathematically literate, but not familiar with your topic). Use a maximum of 3-5 slides and practice with your officemate, sweetheart, or other willing victim to make sure your presentation fits within the 10-minute limit. (One third of the class will present on January 16, one third on January 23, and one third on January 30.) 3. If your committee is not already formed, work with your advisor to choose appropriate members from the faculty. **Send a list of the members of your committee to Sorensen, Hewitt, and Symes** before the next class.

### **WEEK TWO: January 16**

1. **Oral presentations** (max of 10 minutes plus 10 minutes for discussion of answers to the Seven Key Questions, evaluation of slides and presentation)
2. Choose a classmate not working in your area; **explain to that person what your research focus is, its importance, your method(s), how your work fits into your field, results to date, your unique contribution, and possible applications.**
3. Discuss the **Template for Taking Notes on a Research Article** (handout).

**ASSN:** 1. Based on a careful **reading of the photocopied “How Many Shuffles to Randomize a Deck of Cards”** by L. N. Trefethen and L.M. Trefethen, **fill out the Template for Taking Notes.** Look for answers to the Seven Key Question and note any that are not answered or are not answered clearly. Pay special attention to the Abstract. Bring 4 copies of the filled-in Template to class. 2. **Begin an electronic file of papers you read** as background for your thesis. That file, with a minimum of 5 entries, will be due on February 6, along with a portion of your Literature Review.

### **WEEK THREE: January 23**

1. **Oral Presentations** (10 minutes plus 10 minutes for discussion)
2. **Discuss how your answers on the Template compare with other possible answers for accuracy, completeness, and to check if the Seven Key Questions** are clearly identified and answered. (Focus, Importance, Method(s), Context within the field, results, unique contribution, possible applications.

**ASSN:** Work on your electronic file of papers you need for your Lit Review.

### **WEEK FOUR: January 30**

1. **Oral Presentations** (10 minutes plus 10 minutes for discussion)
2. **Plagiarism and Paraphrase** (photocopied)

**ASSN:** 1. Choose the Results or Discussion section from a paper you have read for your electronic file. **Write a paraphrase** of the key ideas in that section, remembering that a paraphrase is always shorter than the original, puts the ideas in your own words (OK to use technical terms and algorithms, etc.), and avoids imitating sentence structure. Merely changing the verb tense or one or two words in a sentence will not result in an acceptable paraphrase. Bring to class 3 copies of your paraphrase and the page(s) it is based on. Please bracket the portion you are paraphrasing so we won't have to search for it. Put a

paper copy in the mailboxes of Sorensen, Hewitt, and Symes. 2. **Complete your electronic file of a minimum of five papers related to your topic.** Identify the answers to the Seven Key Questions in each of the papers so that you can correctly summarize and characterize the contribution of each. Link those findings to your thesis research by showing how they relate to the claim of your thesis. Send the file to Sorensen, Hewitt, and Symes by midnight of Friday, February 5.

#### **WEEK FIVE: February 6**

1. Oral presentation
2. Exchange paraphrases and evaluate: Does the paraphrase contain the key ideas? Is the original sufficiently reworded so that it is a paraphrase rather than plagiarism?
3. Overview of **how to write a good Lit Review** (highly valued in your field)
4. Discuss the photocopied **model of a good Lit Review**

**ASSN: 1. Write a section of your Literature Review (minimum of 3-5 pages.** Clearly identify the similarities and differences in methods and results among your selected papers. Link the contents of those papers with your research so that it is always clear why we are reading that portion of your lit review. Be careful to paraphrase and to cite accurately. Send an electronic copy of your lit review portion to Sorensen, Hewitt, and Symes by 5 p.m. on Friday, February 13. Put a paper copy in our mailboxes by 5 p.m. as well. 2. Read the photocopied **“Scrutiny of an Abstract”** by K. Landes.

#### **WEEK SIX: February 13**

1. Discuss the Landes article.
2. Evaluate the two drafts of a practice abstract for the completeness and clarity of the answers to the Seven Key Questions.
3. Effective and ineffective use of **passive voice**
4. **Effective use of active voice with minimal or zero use of “I” and “we”** in a thesis or paper for publication
5. **Generate a list of active, precise verbs**
6. How should you present your results either in a professional paper submitted for publication or in a thesis. What are the similarities? The differences?
7. Discuss **professional expectations** for the field.

**ASSN: 1. Write a practice abstract** about your thesis topic answering the Seven Key Questions and keeping passive voice to an absolute minimum (one sentence max in passive voice). Bring 4 copies to class and send one electronically to Sorensen, Hewitt, and Symes by 5 p.m. of February 12. 2. **Prepare a 3-minute (1-2 slides max) progress report presentation.**

#### **WEEK SEVEN: February 20**

1. **Progress reports**
2. Exchange **abstracts**. Identify the answers to the **Seven Key Questions**. Note where more explanation is needed and where precision would clarify meaning.

3. Discuss the role of a **Methods section**. How does it look in a “math” paper? In a computational paper?
4. Discuss **professional expectations** for the field.

**ASSN:** 1. **Rewrite your practice abstracts.** Bring 5 copies to class and send an electronic copy to Sorensen, Hewitt, and Symes by 5 p.m. on February 19. 2. Generate **the bibliographic entries** for the papers you read for your Lit Review. **Revise your Lit Review** based on the comments you received from Sorensen, Hewitt, and Symes. Send that revision and the bibliography to them by 5p.m. on February 19 and put a paper copy in our mailboxes. 3. **Begin thinking about your Methods section.** What would a reader need to know in order to duplicate your work? What could you leave out because it is common knowledge even to an advanced undergraduate? Why did you choose this method instead of other possibilities? 2. **In one sentence, write your claim.** To do that, combine need (motivation/focus), method, and results. You might begin such a sentence with “This thesis / research / work proposes / develops / demonstrates / argues....” Bring 6 copies to class. 3. **Get date, time, room for defense set up and OK’d by your committee.**

#### **WEEK EIGHT: February 27**

1. Present approved (by your advisor) **date, time, room for your defense.**
2. **Exchange claims** and comment on their clarity, accuracy, believability, and completeness.
3. **Evaluate a photocopied Methods section.**
4. **Evaluate photocopied Results and Discussion sections.**
5. **Review Outcome Assessment form.**

**ASSN:** 1. Read “A Scrutiny of the Introduction” by Claerbout (photocopied). 2. **Write your Methods section.** Send an electronic copy to Sorensen, Hewitt, and Symes by 5 p.m. on Wednesday, March 11 and put a paper copy in our mailboxes. Bring 2 copies to class on March 13. 3. Complete the selection of papers for your **Lit Review** and **draft the final and complete version.** Send an electronic copy to Sorensen, Hewitt, and Symes by 5 p.m. of March 13 and put a paper copy in our mailboxes.

**NO CLASS THE WEEK OF MARCH 2-6—SPRING BREAK.**

#### **WEEK NINE: March 13**

1. **Exchange Methods section** and discuss for clarity and completeness. Is the choice of method(s) clearly defended as the appropriate choice? Are other possible Methods discussed briefly?
2. Discuss the Claerbout article about writing an Introduction.
3. Discuss the excerpts from **model Introductions** (chapter, section, sub-section).
4. Discussion of **how to give an effective defense:** slides, script
5. Sign up for 20-minute oral presentation of your thesis (short form of your defense) with slides you will use in the defense.

**ASSN:** 1. **Write your Results and Discussion sections.** Send an electronic copy to Sorensen, Hewitt, and Symes by 5 p.m. on Monday, March 16 and put a paper copy in our mailboxes. 2. **Prepare oral presentation.**

**WEEK TEN: March 20**

1. Techniques for **reducing wordiness**
2. **Oral presentations (20 minutes, plus 10 minutes for discussion)**

**ASSN: 1. Write your Conclusion and Introduction.** Send an electronic copy to Sorensen, Hewitt, and Symes by **5 p.m. of Monday, March 30** and put a paper copy in our mailboxes.

**WEEK ELEVEN: March 27**

1. Techniques for **using effective transitions and achieving coherence**
2. **Oral presentations (20 minutes, plus 10 minutes for discussion)**

**ASSN: 1. Rewrite your abstract.** Bring 5 copies to class. 2. **Prepare a 30-second “elevator talk” about your work.** Be prepared to explain in 30 seconds what you do. Your potential audience will be one of the following: your grandmother, a freshman undergraduate, a student in the seventh grade, or a CAAM department secretary.

**FRIDAY, APRIL 3.** This is one of the two days of **Midterm Recess.** We will decide as a group whether to meet. Whether we meet or not, **your completed drafts will be due as a paper copy and electronically on Monday, April 6 at 5 p.m..** Put the paper copies in our mailboxes.

**FRIDAY, APRIL 10.** You should have defended by now if you plan to graduate in May. You will need the next week to revise, proofread, and print your thesis prior to the April 17 deadline for submitting it to the Office of Graduate Studies.

**WEEK TWELVE: April 10**

1. **Oral presentations**
2. **Elevator talks**

**WEEK THIRTEEN: April 17 (Last day of classes)**

1. **Oral presentations**
2. **Elevator talks**

**ALL THESES MUST BE SUBMITTED TO THE OFFICE OF GRADUATE STUDIES BY NOON OF APRIL 17 TO GRADUATE IN MAY. NO EXCEPTIONS!** If you are not at that office by noon, your thesis will not be accepted for May graduation.