

Check list for FCH 495 senior research proposals

Preliminary Steps

1. Read through the topics and ask yourself what you would be interested in doing.
2. Meet with your research advisor and chose a topic.
3. Ask you supervisor for one or two key references. These will help you get started.

Library Research

4. Complete your library research assignments. The goal here is to be able to relate your research proposal to the existing body of knowledge – not just to find a few interesting articles. What is your hypothesis?
5. Prepare a literature review by your assigned due date.
6. Make a list of objectives that you plan to complete.
7. Make a list of key methods that you will need to use.
8. Talk with you research supervisor as to the suitability of objectives and methods

Preparing the Preproposal

9. Discuss your hypothesis and plan of attack with your research supervisor
10. Prepare a 1 page preproposal by your assigned due date.
11. Meet and discuss your preproposal with your research supervisor.
12. Refine your objectives and methods, including new material if appropriate.

Write your proposal

13. Write the introduction.
 - a. What work has been done in this area before?
 - b. What is known about this particular problem?
 - c. Are there any preliminary results?
 - d. Are there any figures or tables that would help convey information?
14. Collect full reference citations.
15. Objectives and Hypotheses.
 - a. What is the purpose of the work?
 - b. What is your hypothesis(s)?
 - c. What are your specific objectives that you hope to achieve?
16. Research Design and Methods.
 - a. What techniques and methods are you going to use to accomplish each of your objectives?
 - b. Have others done these techniques? If so, can you simply copy their protocol?
 - c. What contingency plans do you have if a given technique does not work?
17. What is the significance of this work?
18. What is the timeframe and how long do you expect to complete it?
 - a. Talk with your research advisors to see if your expectations are reasonable.
19. Collect and organize your references.
20. Write an Abstract, Table of Contents and Coverpage.

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Title page (one page only)

- Contains title of paper
- Contains Authors name
- Contains full contact information for author.
- Contains the phrase "A Senior Research Proposal submitted to the Department of Chemistry at the State University of New York, College of Environmental Science and Forestry in partial fulfillment of the requirements for FCH 495 Professional Chemistry" and the date.
- Contains name and contact information for supervising faculty member
- Contains a 50-100 word abstract

Introduction and Objectives

- Briefly introduces the problem to the reviewer.
- Contains a testable hypothesis.
- Contains specific objectives, detailing point by point the work to be done. Objectives must be written as action verbs. i.e. (1) I will measure the effect of light on.....

Background Literature Review

- Provides pertinent background information that the review needs to know to properly understand and evaluate the proposal.
- Discusses key literature references that affect the work.
- Discusses other recent work on the same topic.
- Discusses any preliminary results that have been obtained.
- Properly cites each reference (either by author year or numerically).
- Includes only properly constructed/cited Tables complete with descriptive Table Heading.
- Includes only properly constructed/cited Figures complete with "stand-alone" Figure legend.

Research Design

- Discusses the techniques that will be used for each objective individually.
- Provides in enough description for each method that another chemist, but not necessarily an expert in the particular field, can follow and evaluate the methodology.
- Provides and discusses adequate control experiments.
- Discusses potential pitfalls or problems and how they will be addressed.

Significance

- Discusses and expected results from this project and why they are important

References

- Includes all literature cited in the body of the proposal
- Does not contain references not cited in the body of the proposal
- Follows a consistent reference style (either author year or numerically by order cited)
- Gives full literature citations including authors, titles, dates and inclusive pagination

General Points

- Proposal has been spell-checked and paginated.
- Submitted electronically by the due date.
- Proposal is written in 12 point font with 1" margins.