Writing the Thesis/Dissertation Proposal:
Science, Technology, Engineering, and Mathematics (STEM)

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Purposes of thesis/dissertation proposal:
1. To convince your faculty committee to agree to your thesis/dissertation project for your degree
2. To allow you to plan your research project in great detail using MS Projects or Excel
3. To present a COMPLETED literature review/survey of literature, this shows your project is new research
4. To prepare a 1-2 page Project Summary (of what you are proposing to do for your research project)
5. To present some preliminary data or results to show committee you can complete the research project
6. To get a head-start on the thesis writing and formatting
7. For some disciplines, this is the final step for admission into the Masters/PhD program
Components of a Thesis/Dissertation Proposal

1. One-two page summary of research project
2. Table of contents
3. Introduction/motivation/significance for research project
4. Survey of literature and what’s been done by others
5. Theoretical development/application (if available) to support research project
6. Experimental methods/procedures/materials/facilities/equipment/site to be used with research project
7. Innovation of the research project
8. Preliminary data/results you have obtained to indicate you can complete the thesis/dissertation
Components of a Thesis/Dissertation Proposal (continued)

1. Expected Results going forward for research project
2. Societal benefits of the research
3. Timeline and plan for the research project using Excel or Microsoft Projects
4. Submit to your major professor electronically (or in hard copy format, if requested) for approval before the full committee
5. After approval by your major professor, send the electronic thesis/dissertation proposal to your full committee at least two weeks before your formal presentation
6. If changes are suggested, make them or discuss why they can’t be included before the presentation
Oral Presentation of a Thesis/Dissertation Proposal

1. Prepare a power-point presentation to present to your thesis/dissertation committee.

2. PPT should present essentially the main points as the electronic and hard-copy version of the thesis/dissertation proposal in a simpler way.

3. PPT presentation should be 45-60 minutes in length, which gives you time to present your proposal and time for the committee to ask you questions about your research.

4. The committee may also ask questions about other topics that may be related to your thesis/dissertation research project to test your grasp of the topic and research area.

5. The PPT slides should be easily read from the back of the room.
Oral Presentation of a Thesis/Dissertation Proposal (cont.)

1. The PPT should not be too busy or too complicated, so that you can completely explain each PPT slide in about 1 minute or less, therefore 45-60 minutes means 45-60 slides.

2. Be prepared or anticipate possible follow-on questions to provide further explanations—may have extra PPT slides available at end.

3. Speak clearly and loudly enough to be easily heard from the back of the room.

4. Dress appropriately for the thesis/dissertation proposal presentation, because this ALWAYS shows your strong interests, no cut-offs, t-shirts, sandals, etc.

5. Bring a laser pointer and a back-up laser pointer.
Oral Presentation of a Thesis/Dissertation Proposal (cont.)

1. Well before the presentation, go to the room and check your laptop or the room laptop to make sure your laptop/presentation is compatible.

2. Practice your presentation to ensure the time required is 45-60 minutes.

3. Practice will give you an opportunity to catch and correct any errors in the presentation.

4. Practice your presentation before other graduate students to receive feedback, comments, questions, pretend this is real proposal presentation.

5. After the presentation, incorporate the suggested/required changes in the thesis/dissertation project and let all committee members know of the changes.
Oral Presentation of a Thesis/Dissertation Proposal (cont.)

1. Keep all committee members informed of progress at least every semester, so there will be no surprises to anyone.

2. It would not hurt to stop and chat with them in the hallway or their office every month or so to inform them of your progress and any problems or disappointments you have.

3. The other committee members may offer to help.

4. Of course, keep your major professor informed of progress and problems at least weekly.

5. Ask your major professor to meet weekly to review your project.
Communications in Scientific Teaching and Research: Phys 6155 and Biol 6150-A Research Proposal Writing Course for Graduate Students Taught each fall semester on four Friday afternoons (2-5 pm) and following Saturday (9 am-1 or 2 pm)

1. Roots of American Research University and Funding of Research at Universities
2. Abstracts, Executive Summaries, White Papers, Proposals
3. Elements and Components of a Research proposal
4. Agencies that Support Research
5. Write a National Science Foundation or National Institutes of Health proposal
6. Poster and Oral Conference Presentations, Seminars, Colloquia
7. Curricula Vitae and Resumes
8. Job Applications
9. Electronic Notebook of Course Materials
10. Ethics in Scientific Teaching and Research-Review Ethics Cases in Class
11. Writing Techniques-Outlining Before Writing, Editing, Writing, Editing, Writing, Editing
12. Oral Presentations of White Paper to Funding Agency Program Manager
13. Job Interview
14. Visiting Speakers on Theses and Dissertations, Processing Proposals, Compliance