

Guidelines for Comprehensive Proposals  
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The comprehensive exam is one of the last programmatic requirements for the Ph.D. degree prior to the completion of a doctoral dissertation and defense. The goals of the comprehensive exam are two-fold: 1) the candidate must show the examining committee that she/he has a well-defined research project with clearly defined goals, and 2) the candidate must demonstrate that she/he has the ability to execute successfully the proposed research plan. In preparation for the exam, the candidate should be sure to have a firm understanding of the fundamental principles relevant to the proposed field of study and show the ability to apply those principles to new scientific challenges. The comprehensive exam requirement should be fulfilled before the start of a student's 3<sup>rd</sup> year in the program.

The comprehensive exam consists of two parts: 1) a written proposal and 2) an oral defense. Successful completion of the exam requires that the candidate's committee approves both the written proposal and the oral defense.

Below are guidelines for preparing the proposal.

The written proposal is intended to be a scholarly document that describes the research a student plans to pursue for a Ph.D. dissertation. Most students will have already begun their dissertation research, but the proposal should focus on what the student intends to accomplish for her/his doctoral thesis. Progress made by the time of the comprehensive exam can be described as preliminary results.

The general candidacy proposal format should follow loosely the structure required by the National Science Foundation and described in the NSF's Grant Proposal Guide (Section II.C.2.d): [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=gpg](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg). Specifically, the proposal should...

"...provide a clear statement of the work to be undertaken and must include: motivation and objectives for the proposed work, expected significance, and relation to the present state of knowledge in the field. The proposal should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures."

Each candidate (in consultation with her/his advisor) is free to decide how the proposal is organized (i.e. Introduction, Techniques, Methods Development, Prior Results, Plan of Work, etc.) but the proposal is subject to several restrictions:

- The written proposal must not exceed 20 pages, double-spaced with 1" margins, including figures *but not* including references and appendices. Text font size should be either Times/Times New Roman 12 point or Arial/Courier/Palatino/Helvetica 11 point.

- References should include all necessary citation information (journal, volume, year, starting and ending page number) *and* title. Citing a reference indicates that the candidate understands why the cited work is relevant to the material being presented in the proposal.
- Material suitable for appendices can include a) characterization of molecules synthesized prior to the candidacy exam (i.e. NMR, IR, Mass spec data); b) software or other code written for computational analysis; c) technical drawings such as those used for machining instrumentation or designing electrical circuits; d) experimental conditions for previously performed studies (including experiments that led to data being presented in the body of the proposal).

Questions about format, organization, and/or content should be discussed with one's research advisor and/or one's committee.

The written proposal must be distributed to the examining committee at least two weeks prior to the oral defense. Members of the committee will then review the proposal and, when appropriate, provide feedback and/or request that additional content be included in the proposal. Approval of the written proposal is not required prior to the oral examination, but questions that arise during the oral examination may lead to the student being asked to revise the written proposal to address issues that are deemed relevant to the planned research.