Comprehensive Examinations

1. An early meeting of the PhD Student's Supervisory Committee will be a Comprehensive Examination. The purpose of this oral examination and the associated report is to evaluate the student's readiness to successfully complete the PhD degree. The exam will test the student's overall knowledge of chemistry, including fundamental material oriented towards the student's chosen branch of the field as well as the details of their own research program. This exam also serves as a formal approval of the student's proposed research program.

2. The Comprehensive Examination should be held within 18 to 20 months of the student's being initially registered in the PhD program (or within 6 to 8 months after first year transfer from the MSc program). The exam is conducted in a format similar to regular Supervisory Committee meetings, i.e. starting with a short (~20 minutes) talk on their research plans (and/or progress) and leading into research questions and then into more comprehensive questions. At least half of the examination time will involve questions of a fundamental or comprehensive nature. The student is to prepare a report and proposal for future work which is given to all members, including the chair, of the committee about one week before the exam.

3. The examining committee expects to find:
   - strong analytical, problem-solving and critical thinking abilities
   - required breadth and in-depth knowledge of the discipline
   - required academic background for the specific doctoral research to follow
   - ability to conduct independent and original research
   - ability to communicate knowledge of the discipline

4. The result of the Comprehensive Examination will be one of the following:

   a) **Pass.** The student has fully met the requirements for the PhD Comprehensive Examination and the proposed research program is satisfactory.
   b) **Pass with requirements.** The student has partially met the requirements for the PhD Comprehensive Examination. Certain deficiencies have been identified; the student/supervisor will be informed of this by e-mail. Advancement to Candidacy form will **NOT** be submitted until these requirements are met.
   c) **Re-examination.** The student has not met the requirements for the PhD Commprehensive Examination, and the Supervisory Committee recommends a re-examination. The re-examination **MUST** be held within 24 months of the original student start date. A student failing the second Comprehensive Examination will normally be asked to withdraw from the PhD program as outlined below in 4d.
   d) **Fail.** The student has not met the requirements for the PhD Comprehensive Examination, or the proposed research program is not satisfactory, and the Supervisory Committee does not recommend that the student continue in the PhD program. A fail recommendation can have two possible outcomes:
      a. Transfer to MSc program – The student will be asked to transfer to the MSc program and can complete their research in this program.
      b. Withdrawal from program – The student will be required to withdraw from the program.

Guidelines

1. In addition to the (normally) four member Supervisory Committee (the Research Director, member chosen by the student, member chosen by the Research Director, and member chosen by the Department), one other faculty member will be the Chair of the Comprehensive Examination Committee. The Chair will moderate the exam and the following in camera discussion.

2. Approximately one month prior to the exam, the student may arrange individual meetings with members of their Supervisory Committee. During this optional meeting, the Committee member may communicate what areas of chemistry they expect the student to be proficient in, and may suggest textbooks or other resources which the student should review prior to the exam.

3. At least one week before the meeting, the candidate will circulate to the committee (including the Chair) a formal report on the goal of their dissertation, current status of research, and a proposal for the completion of the thesis – see below for report requirements.

4. The exam will commence with a short talk (maximum 20 minutes) by the student summarizing the project, work accomplished thus far, and proposal for future work.

5. Examinations should be about two to two and one-half hours in length, and should not be scheduled if less than a two hour period is available.

6. At least half of the examination time should be concerned with questions that emphasize fundamental material oriented towards the student's chosen branch of chemistry (i.e., inorganic, organic, physical, analytical etc.).

7. After the conclusion of the exam, an in camera meeting will be held to decide on the outcome of the exam. The discussion will be moderated by the Chair, and both the performance in the Comprehensive Exam, and the proposed research program will be evaluated. The student will be informed of the outcome by their research supervisor as soon as possible following the meeting.

Written Report Guidelines

1. The report is to be a maximum of 24 pages in length, including title page, and experimental pages. An addition 2 pages are permitted for a reference section
2. If it is necessary to include bulky experimental details or data pertinent to the report, an appendix is allowed, however any discussion should be limited to the body of the report. The appendix is to be written to the same exacting quality as the report itself. Both the report and appendix are examinable.
3. The text is to be double-spaced in 12 point font, ideally Times New Roman for the text and sans serif font (e.g., Arial) in figures and images. Paper margins are to be 1 inch.
4. The first page (see template below) is to include the following
    a. Title, Name, prior degrees.
    b. Courses candidate has taken at UBC.
    c. Courses candidate has taught at UBC as a teaching assistant.
    d. Supervisor, Committee members, Chair, Date, time, and place of examination.
    e. Abstract (350 words maximum) including motivations for the work.
5. The remainder of the report is to be in the format of a journal article in the candidate's field of research with Introduction, Experimental (including data), Results and Discussion, Conclusions, Future works, and Reference sections.
6. The introduction is to provide an overview of the dissertation, its primary objectives, the wider implications, the scientific significance including a literature survey, and any innovative or novel aspects in brief and clear language.
7. A minimum of 3 pages are to be devoted to proposed future work, including a well-defined plan for the future phases of the dissertation work, as well as a roadmap and expected milestones.
8. References are to be two pages maximum; no smaller than 10 point font and single spaced is acceptable for this section.

TITLE WITH A CONCISE AND ACCURATE DESCRIPTION THAT INCLUDES KEY WORDS AND AVOIDS USING SCIENTIFIC FORMULAS

Earl E. Bird

B.A., The University of British Columbia, 2014
M.Sc. The University of British Columbia, 2014

Courses taken at UBC: Chem 500, 501, 502, CHBE 503
Courses as teaching assistant at UBC: Chem 121, 123, 211

Supervisor: Brighton Early
Committee Member: Al Dente
Committee Member: Al Fresco
Committee Member: Evan Keel
Chair: C. Worthy

Examination: May 11 2023, 09:00, Room D317

Abstract

The abstract is a concise and accurate summary of the research contained in the report. It states the problem or motivation for the work, the methods of investigation, and the general conclusions, and should not contain tables, graphs or illustrations. It **must not** exceed 350 words. The abstract may be single spaced.