Minimalist PhD Checkpoint Proposal

1. Qualifying Oral Examination

Deadline: Exam must be completed within the first 16 months of the PhD program.
Otherwise, the student will be placed on academic probation.

Purpose: To assess the candidate's breadth of knowledge in several designated areas of CS, and their depth of knowledge in one specific research area. The possible "areas" are predefined in the specification of the question bank (below), which are expected to align with the 15 research areas that our courses are divided into.

Question Bank: Well before any exams are held, the DCS faculty together assemble five questions in each of the several research areas (faculty in each area are responsible for their own questions). These form the question bank, which is visible on the web to DCS grad students and faculty.

Scheduling: The candidate forms their PhD supervisory committee, selects one primary research area (out of 15, say), and selects the N other research areas (e.g., N = 8) to be questioned on at the oral. The Grad Office selects two other graduate faculty members, more or less randomly from the N other research groups.

Proposed Exam Format:
During the oral, the student can be asked any of the 5N questions from the N selected areas in the question bank. The student should demonstrate a sufficient breadth of knowledge in answering these questions. In addition, the student will be asked more in-depth questions, beyond those in the question bank, in the selected primary research area.

Possible Results:
- Pass. This can include recommendations for further reading.
- Fail (with the option to repeat). The student is placed in a probationary period, and must retake the exam within 6 months. The student will not be given a third chance to pass the exam.
- Fail (no option to repeat). Student must withdraw from the program.

2. PhD Committee Meeting(s)

These meetings are for students who have passed their qualifying oral.

Deadline: Such a meeting must be held at most 12 months after the student's previous PhD supervisory committee meeting (including the qualifying oral). (Exception: If the student expects to have a completed thesis ready shortly after this deadline, then a 6 month extension will be permitted.)

Purpose: To assess both the proposed research and the research progress that the student has made since the previous committee meeting. In addition, provide feedback to the student on the proposed research (or, even, on the completed thesis).

Student Preparation:
The student completes an annual progress report (much like our current progress monitoring reports). The student may include their own papers, or drafts they are working on.

Optional Materials: Senior students can also submit a thesis proposal for approval at this meeting. Such a proposal should be a brief document (e.g., table of contents, descriptions of current results, and descriptions of results expected from further research). Alternatively, the student could provide a completed thesis, in which case this meeting will take the form of our current departmental defense.

The student will be asked to speak for 15 minutes on their research efforts in the previous year, and to briefly sketch where they are planning to take this work in subsequent months. This talk could be open to all DCS members.

Questions and feedback: This talk is followed by one or more rounds of questions from the PhD supervisory committee. The examination chair will record brief minutes on the feedback provided. If the student is presenting a completed thesis, the general audience can stay for the question period (as they do now in our departmental defenses), otherwise they will be asked to leave after the talk.

Categorical Results: The options here are:
- Pass and at most one of:
    o the thesis has been approved, proceed to the SGS Final Oral Exam.
    o the thesis proposal has been approved.
    o the proposed research topics are sufficient for the student to achieve candidacy in research.
- Fail (first time). Student placed in a probationary period, and must reschedule the committee meeting within the next 6 months.
- Fail (while on probation). Student must either withdraw from the program or have their registration terminated.

Notes:

Students only need to achieve candidacy in research once. For example, if they achieve candidacy in one research topic, but then switch research areas entirely, they will still be considered to have achieved candidacy in research.

Students do not need to hold separate exams for achieving candidacy, for a thesis proposal, nor for the thesis approval stage. Rather, a student can go through several of these stages in one meeting.

Achieving Candidacy in Research. In order to achieve candidacy in research the completed and proposed research must lay out a suitable thesis topic. That is, the research scope needs to be sufficiently broad to form the basis for a thesis, and it should be plausible to have this work completed within several years. There is no implication here that the student must complete their thesis on this topic. Note that achieving candidacy (according to SGS) also involves the completion of the course and breadth requirements.

Approved Thesis Proposal. The purpose of including this category of feedback is to allow the committee to sign off on the expected content of the final thesis. (Similar to our current "Thesis Proposal" checkpoint).

Approved Thesis. A PhD committee meeting that resulted in this recommendation would be the equivalent of our current departmental thesis defence. The student would then permitted to proceed to the SGS PhD Final Oral Examination.