



The Qualifying Examination for Advancement To Candidacy for the Doctoral Degree

A Guide for Students

Purpose of the Examination

The aim of the Qualifying Examination is to evaluate the student's preparedness for a research career. The examination provides a means for a faculty committee to assess the ability of the student to use his/her knowledge and understanding of the fundamental facts and principles of molecular and cellular biology to solve current problems in the area of the student's thesis research and in allied fields. The examination also allows the committee to judge the student's ability to think incisively and critically about both the theoretical and practical aspects of biological research at a number of levels. For eligibility see also "Course Requirements for Graduate Students".

Eligibility

A student must have passed with a grade of B or better three approved courses. If coursework is not complete, students will not be allowed to take the exam. In all cases, extensions for the qualifying exam will not be given past the fall semester of the student's third year. In a case by case basis, students may be allowed to take the qualifying exam before the Spring semester of their second year. Approval for taking the exam early is based upon prior coursework and research experience and is at the discretion of the Advisor and the GAC.

Committee Composition

- Qualifying Examination Committees will be comprised of four faculty; the Chair and the outside member must be members of the Berkeley Academic Senate.
- Adjunct faculty in MCB are eligible to serve, but not as Chair.
- Three of the four faculty must be members of the Department of Molecular and Cell Biology (MCB).
- At least one of these three must be from the Division of MCB with which the student is affiliated, and at least one of the three must be from another Division of MCB.
- The fourth member must be from a department on the Berkeley campus other than MCB (e.g., Integrative Biology, Plant Biology, Chemistry, Public Health, etc.). See the GAO for current listing.
- In cases where additional expertise is desirable, the student may suggest a fifth member for the committee. The fifth member may be a faculty member from another university (e.g., UCSF, Stanford, UCD, UCSC).

Timetable for Preparation for the Examination

Phase I (before January 21)

- The student must contact, in person, the Second-Year Advisor of his/her Division.
- The student should inform the advisor of the subject of his/her dissertation research area and submit a topic for an outside (breadth) research proposition. The outside proposition must meet the criteria of an original, feasible research area distinctly different from the area of the student's dissertation research.
- Based on the areas of the thesis research and the outside proposition, the Second-Year Advisor, together with the student, proposes a Chair, two inside members, and one outside faculty member to serve as the Qualifying Examination Committee. The proposed committee is reviewed by the Divisional Advisors, who may make changes to ensure that: (a) the expertise of the committee is appropriate for the subject areas to be covered in the examination; and, (b) committee service is distributed as equitably as possible for both the faculty from MCB and outside Departments. The composition of the committee is then submitted to the Graduate Division for official approval.
- The Second-Year Advisor, together with the student, completes the Departmental form listing the three areas required for examination. For MCB students these include: (a) the subject of the student's doctoral dissertation research; (b) the general area to be covered in the outside research proposition; and, (c) the overall subject area of Molecular and Cell Biology. (These forms will be used by the GAO to prepare the official Graduate Division Application.)
- Once the Qualifying Examination Committee has been appointed, the student should introduce himself/herself to the members and briefly describe the areas to be covered in the examination.

Phase II (before March 1)

- The student must meet with the Chair of the Qualifying Examination Committee. At this meeting, the student presents **detailed outlines** for his/her two written research propositions. One of these propositions must be focused on the specific problem being addressed in the student's dissertation research; the other proposition must be focused on the specific subject area selected as the outside (breadth) topic during Phase 1 (see above). At this meeting, the Chair must reconfirm that the topic and outline of the outside proposition are appropriate, especially with regard to satisfying the breadth requirement.
- Once approval of both proposition topics and outlines has been granted by the Chair, the student has **three weeks** in which to compose and submit to the Chair **both** completed propositions.
- In preparing the proposition that describes the student's own dissertation research, the student is encouraged to consult frequently with his/her thesis mentor. In preparing the outside (breadth) proposal, the student may seek general advice, literature references, and general information from faculty who may be knowledgeable about the area that the student has selected. However, Berkeley faculty are not permitted to participate directly in the conception, writing, revision, or practice ("pre-prelim") of the outside proposition.
- Both propositions should be written in the manner of a grant proposal, i.e., Abstract, Background & Significance, Specific Aims, and Experimental Plan. Both propositions should be as concise as possible and should under no circumstances exceed 10 single-sided, double-spaced typewritten pages, 12 pt. type size.

Phase III (before the end of the Spring Semester)

- After the completed propositions have been submitted to the Chair, each of them will be evaluated by the Chair, or by another member of the committee designated by the Chair, within a week. The purpose of the evaluation is not to identify explicitly or correct specifically any logical flaws or experimental defects, but is to establish whether the proposition provides an adequate basis for examination of the student. However, the Chair does have the responsibility to inform the student if either proposition is unacceptable and to direct revision of the proposal to the extent needed for its approval.
- Once the propositions have been submitted and received approval, the student is expected to schedule and take the examination before the formal end of the Spring Semester. The GAO will assist the student in finding a suitable room for the examination.
- Before the official examination, the student should prepare a presentation of approximately 20 minutes for each proposition. These should be used as a basis for holding practice sessions ("pre-Prelims") with senior graduate students and/or postdoctorals who are knowledgeable about the subject matter of the student's thesis work and outside proposition topic, but are not exclusively members of the student's laboratory group.

Format of the Examination

- The student should circulate both written research propositions to all of the committee members at least **one week** prior to the scheduled examination date.
- During the oral examination itself, the thesis proposition will be discussed first, followed by the outside proposal. In each case, the student should be prepared to defend, in detail, the research described. In addition, the student should expect to be questioned in considerable depth not only about the general areas of the propositions, but also and about his/her general knowledge of his/her major field of study.
- During the examination, the student is allowed to provide one or two appropriate diagrams or figures, but **only** if this information would be difficult to convey by use of chalk and a blackboard.
- The student may bring into the examination room only a brief "one page" outline upon which they may rely during their presentation.

A typical Qualifying Examination lasts approximately three hours.

Exam Failures and Retakes

In case of a failed exam, the student must re-take the exam before the end of the following semester.