

The Purpose Of A Qualifying Examination

The intent of the Qualifying Examination is to ascertain the breadth of the student's comprehension in at least three subject areas related to the major field of study, and to determine whether the student has the ability to think incisively and critically about the theoretical and the practical aspects of these areas. The examination may consider a number of academic points of view and the criteria by which they may be evaluated.

Some degree granting programs (departments, Schools, Graduate Groups) expect students to present a topic for the dissertation as part of the preliminaries for the Qualifying Examination, but the examination must not be narrowly limited to the dissertation topic.

The examiners should satisfy themselves, by unanimous vote, that the student demonstrated sufficient command of the three subject areas.

All students are expected to take the qualifying exam by the end of the second year and advance to doctoral candidacy before the beginning of the third year. The Qualifying Examination assesses the candidate's broad knowledge of all the coursework taken during the student's first and second years in the graduate program (including any prerequisite material) and determines in-depth knowledge in the proposed area of research.

The examination consists of a dialog between the student and the examiners to provide a forum for the student to demonstrate an ability to integrate and extrapolate from information obtained in the classroom and laboratory.

Failure of the student to proceed to the OQE before the fall semester of year three will be grounds for dismissal or redirection to an M.S. The OQE may, with compelling justification and for extraordinary events, be postponed until a later date upon recommendation and approval of the Head Graduate Advisor.

Examination Format

The OQE committee will examine the student on

- General scientific knowledge - including course content established in NST103 & NST 260
- Background knowledge in the area of their dissertation research
- Ability to formulate and defend a hypothesis
- Ability to defend experiments and techniques to test hypotheses
- Ability to postulate expected and alternative results
- Interpretation of expected and alternative results.

The student will prepare a formal written proposal to describe their dissertation research in consultation with their OQE Committee. The OQE Committee will decide when the student is ready for the oral defense of the written proposal. The student must distribute a copy of the proposal to each member of the Committee at least one week before the exam.

The OQE Committee may recommend: 1) a pass; 2) a partial failure requiring additional coursework and/or written reports and/or revision of research plans; 3) total failure.

Total failure may result in a redirection to an M.S. or separate the student from the program. Graduate Division policy establishes these categories, i.e.,. There is no such category as a qualified pass. A partial failure will require a new Oral defense. Upon completing the OQE, the student enters into candidacy, and responsibility for their further development passes to the Mentor and the Dissertation Committee.

Basic Elements Of The Exam

1. Assemble a committee
2. Write a proposal for your dissertation research
3. Orally defend your proposal to a committee of senior scientists.

The Qualifying Exam Committee

It is recommended that students begin early in their second spring semester by forming a committee and preparing a proposal. To initiate this process, students should email the Graduate Student Affairs Officer (GSAO) and the head graduate advisor, listing the names of potential committee members. The head graduate advisor will select the committee members from the submitted list. Once the committee is selected, students will receive a confirmation. It is then the student's responsibility to contact the faculty members on the committee.

The Head Graduate Advisor will select a committee and set the test date for any student who still needs to meet these two milestones by February 1 of their second spring semester.

All committee members must be members of the Berkeley Division of the Academic Senate, including those holding titles of Professor, Associate Professor, Assistant Professor, and [more](#). The Graduate Division sets these requirements.

Composition of the Committee

Committee Responsibilities

- Any examiner may ask questions in any subject area. *Thus, we recommend that the student meet with each committee member before the examination to discuss the proposal and the committee member's expectations. The professor and student may choose to focus on topics within a particular subject area and may meet regularly to discuss these topics.*
- The student's advisor or co-advisor are normally excluded from the OQE committee and under no circumstances can serve as chair of the OQE.
- The Chair needs to be a core member of the Metabolic Biology Program. All other members can, but do not have to, be members of the Metabolic Biology Program. There is no requirement for an "Outside" member.
- All four committee members must be part of the UC Berkeley Academic Senate (see guidance on how to include UCSF faculty below).
- The committee chair and the student should meet before the exam to review expectations and the exam format.
- Following the exam, the Chair should email the Graduate Advisor a pass/fail notification and any feedback from the committee. This should then be shared with the student and the student's advisor.

Committee Member 1 (Chair)

The Chair should be a tenured faculty member from the Metabolic Biology Program Core Faculty. The Chair should be familiar with the field in which the student proposes research.

Committee Member 2 (ASR)

One committee member must be an Academic Senate Representative (ASR) to serve as the Graduate Division's representative to ensure the exam's integrity. The ASR may not be an adjunct faculty member. The ASR is permitted to be from the student's program (major).

Committee Members 3 & 4

The rest of the committee should be composed of scientists who can assess the student's proficiency. That is, committee members need not be experts in the student's proposed topic but should have peripheral knowledge of the proposed research area to challenge the student's hypotheses and approaches.

**If the student wants to add a UCSF faculty member, that person needs to be a member of the MB program. The student will have to select one of two options to do this:

- 1) The student adds the UCSF faculty member as a 5th member to your committee, which will require no additional paperwork.
- 2) If UCSF faculty replaces either the Academic Senate Rep or one of the additional members. That will require an exception request to be sent to Grad Div for approval.

Important details for committee selection

Metabolic Biology students can consult the faculty list on the NST site:
<https://nst.berkeley.edu/people/faculty/metabolic-biology>.

Adjunct Professors may serve as committee members by exception but not as the committee chair or ASR. There can be only one such non-senate committee member per committee, which requires approval from the Head Graduate Advisor and Dean of the Graduate Division.

Non-Senate members and faculty from other campuses may serve upon approval of the Head Graduate Advisor and Dean of the Graduate Division.

Thesis Advisor Role + Involvement

The thesis advisor is expected to advise their student on developing the proposal and adequately preparing for the exam. As such, the student is encouraged to work directly with the advisor (and lab members) to craft the proposal and practice the oral portion of the exam. It is common for the student to give multiple practice exams, some of which will include peers from outside of the lab without attendance by the thesis advisor. The student's advisor or co-advvisor are normally excluded from the OQE committee and under no circumstances can serve as chair of the OQE.

It is highly encouraged that the student and advisor meet early to discuss:

1. Potential committee members

2. Tentative exam date (suggestion: agree on a general time frame to accommodate committee scheduling conflicts).
3. Potential project, aims, and experiments.

The student and advisor must agree on the advisor's involvement in the writing and preparation process. Some students rely more heavily on their Committee Chair, while others meet regularly with their advisor during OQE preparation.

Suggested Timeline Of Completion

The following dates are approximated for a mid-April qualifying exam. Students and Qualifying Exam Chairs should adjust this timeline to accommodate academic breaks as needed for the student's exam dates. Qualifying exams are typically scheduled before the end of the second year in the program. A checklist encompassing this information can be found in Appendix 1.

-4 months before QE	<ul style="list-style-type: none"> - Meet with advisor to discuss proposal content - Enroll in NST 299 - Email the Graduate Student Affairs Officer (GSAO) and the head graduate advisor with a list of potential committee members.
-3.5 months	<ul style="list-style-type: none"> - Get confirmation of finalized committee members - Meet with QE Chair to discuss proposal content and expectations + agree on deadlines for outline(s) or draft(s) requested by QE Chair
-3 months	<ul style="list-style-type: none"> - Meet with Committee Members to discuss expectations and proposal content - Schedule qualifying exam (ideally, this is done as soon as the committee is finalized)
-2 months	<ul style="list-style-type: none"> - Send specific aims proposal outline to the QE Chair, as agreed in the initial meeting - Have the first draft of the proposal and discuss it with the QE Chair or thesis advisor - Reserve examination room - Email QE details (date, committee) to your Head graduate advisor and GSAO
-1 month	<ul style="list-style-type: none"> - Submit Qualifying Exam form* - Arrange practice qualifying exam(s) with the lab and/or people in the department - Finalize draft with QE Chair or advisor, abiding by deadlines set in the initial meeting
-1 week	<ul style="list-style-type: none"> - Email final proposal to committee members - Email exam information to committee members (date, time, room, zoom link) - Test technology in the reserved examination room - Practice qualifying exams with lab or cohort
<p>TAKE QUALIFYING EXAM Make sure that your committee completes the QE Report</p>	

Your Chair Committee needs to send the report to the GSAO	
Post-exam	- Apply for Advancement to Candidacy*†

* See the section below titled "SUBMITTING FORMS" for instructions on accessing these forms.

† Submitting this form will incur a \$90 administrative filing fee that will appear on CalCentral.

Requirements For The Written Proposal

The proposals serve as the basis for the oral examination but do not limit its scope. The following guidelines serve as recommendations to both the student and the Qualifying Exam Chair. Upon approval of the Chair, minor modifications may be allowed.

1. Cover Page
 - a. Includes title, student name, department, thesis advisor, qualifying exam committee, and date
2. Specific Aims Page
 - a. 2-4 individual aims; 2-3 sub aims per larger aim
 - b. 1-page maximum, single-spaced
3. Proposal
 - a. Max of 10 pages, single-spaced, justify left, 11pt sans-serif font
 - b. 1-2 pages for *Introduction + Significance*
 - c. 2-4 *Aims*; each should include:
 - Rationale* (1-2 paragraphs)
 - Preliminary data
 - Experimental approach*
 - Anticipated results and Potential challenges + alternative approaches* (1-2 paragraphs)

Students can find examples from past OQE presented by other Grad Students [here](#)

Expectations For The Oral Qualifying Exam

The oral examination will last approximately 2-3 hours. About one-third of the Examination covers the major proposal, with the remaining time allocated to the breadth of metabolic biology and the proposal. The course of a typical exam is as follows:

- 1. Before the exam,**
Committee members will read the student's proposals, which must be sent to them at least one week prior to the exam date.
- 2. Initial committee meeting (student not present)**
At the top of the meeting, the student will leave the room to allow the committee to discuss the student's academic record, the quality of the written proposal, and any evaluations of academic progress.
- 3. Examination begins: proposal (student present).**
The exam will concentrate on the proposal. During the oral qualifying exam, the student is typically required to deliver a "chalk talk," which involves explaining their proposal while using a whiteboard to illustrate their points and answer any questions from the committee. All committee members will ask questions throughout the exam to assess the student's expertise. Questions

may start with general knowledge and then focus on specific problem areas or future directions within the proposal.

4. Brief committee check-in (student not present).

After ~1-2hr of assessment, the Chair will pause the examination and ask the student to leave the room. The committee will discuss the student's performance and any issues that arose and determine whether to revisit topics or move on to another topic.

If necessary, the student returns and answers any additional questions.

5. Committee Deliberation (student not present)

The committee determines whether the student has earned a passing evaluation on their performance.

6. Delivery of Results (student present)

- a. Passing the Qualifying Examination requires a unanimous vote of the Committee. The student returns to the examination room, and the Chair and Committee deliver their results: Pass, Partial Fail, or Total Fail.
- b. Within two weeks of the exam, the Chair will write an evaluation of the student's performance during the exam, which will integrate any committee recommendations. This feedback shall be sent to the GSAO and added to the student's academic record. The student or their advisor may access this feedback anytime by emailing a request to the GSAO.

Exam Failure + Retakes

1. In the event of a **partial fail**, the student will perform all edits, amendments, and rewrites suggested by the Committee and submit the revised proposal within one month of the original exam date. The student and/or the Committee should consult with the advising office if more time is needed. The Committee, led by the Chair, will meet to discuss whether the edits are sufficient to earn a passing mark. The Committee may or may not ask the student to be present for a portion of this subsequent meeting.
2. In the event of a **total failure**, the committee either recommends a second (and final re-examination or does not recommend a re-examination, leading to dismissal from the program. Students may not retake the exam for at least three months but must retake the exam before the end of the following semester. All total fail outcomes must have the unanimous approval of all committee members and be finalized in consultation with the Head Graduate Advisor.

You can check details on this here: [Qualifying Examination Results](#).

Guidelines For Faculty

1. The Chair
 - a. The Chair should meet at least once with the student (but more as needed) to ensure appropriate progress during the qualifying exam preparation phase.
 - b. The Chair informs the committee of the rules and format of the exam. The Chair also directs discussion of the student's preparedness and performance during the discussion phases in steps 2, 4, and 5 of the Expectations for the Oral Qualifying Exam.
 - c. During the exam, it is the Chair's responsibility to ensure that all committee members adhere to the agreed-upon rules of the exam.
 - d. The Chair will compile comments into a single report, filling out the following [Report to the Graduate Division on the Qualifying Examination](#) on the Qualifying

- Examination; the committee should send the form to the GSAO for submission to the graduate division.
- e. The GSAO will add the form to the student's academic record. This report will be available to the student within two weeks of the exam. ([QE Report](#))
 - f. In the event of a partial failure, the student will receive instructions from the chair on preparing for the new exam and within what timeframe.
2. Committee members
 - a. Committee members are suggested to meet at least once with the student to ensure proper communication of expectations and concerns regarding the proposed topics.

Submitting Forms

All relevant qualifying examination forms are now digital. Log into CalCentral and access the Main Dashboard (landing page) to access them. Scroll down to the Student Resources box, "the committee recommendations *Higher Degree Committees Form*." This will lead you to the Graduate Division portal, which is still within CalCentral.

1. **Apply to take the Qualifying Exam (1 month before the exam).**

For the first prompt (Higher Degree Committees Form), select "Qualifying Examination." For the second prompt (Committee Type), click the magnifying glass icon and choose "Doctoral."
2. **Apply for Advancement to Candidacy (to be submitted after passing the exam).**

[Forms & Applications](#) - For the first prompt (Higher Degree Committees Form), select "Advancement to Candidacy." For the second prompt (Committee Type), click the magnifying glass icon and choose "Doctoral." ** make sure to review [Doctoral Advancing to Candidacy](#) and [Dissertation writing and filling](#) For next steps.

ACKNOWLEDGMENTS:

This guide adapts to the OQE guidance available at PMB. Their guidelines have been instrumental in shaping the content of this guide, and we are grateful for their efforts and contributions.

Appendices:

Appendix 1 Qualifying Exam Checklist

This checklist will help you track your to-do items to prepare for your qualifying exam. It is not an exhaustive list of action items but encompasses the main and timely ones to help make sure you meet all deadlines. Please review and contact NST GSAO for any questions as you work through the list.

Before The Exam:

- Select your QE Chair and Committee Members (3-4 months).

- Email the Graduate Student Affairs Officer (GSAO) and the head graduate advisor with a list of potential committee members.
- Get confirmation from the GSAO and/or head graduate advisor of finalized committee members.
- Finalize the date and format of your exam (2-3 months).
 - If hybrid/remote, an email confirmation must be submitted on the QE application showing student and committee agreement. See important notes on this*
 - Inform GSAO of the date (this will initiate the QE prep process for faculty and staff).
- Reserve a room and/or set up a Zoom link and calendar invite if hybrid or remote (2-3 months)(You can email the GSAO to nst_gsao@berkeley.edu).
- Meet with the Chair to go over the Exam Format.
- Submit the QE application ([instructions](#) and [video tutorial](#)) (4-5 weeks, 6-7 if exception required)
 - *Those with exceptions (non-senate members) must also submit it to GSAO.
 - a CV of the member.
 - 3-4 sentence explanation of research/topic that non-senate will help examine.
- Meet with committee members to review proposal (1-2 weeks).
- Submit the proposal (1 week).
- Make sure the committee has the following [form](#) so they can complete the Report to the Graduate Division on the Qualifying Examination; the committee should send the form to the GSAO for submission to the graduate division.

After The Exam:

- Review the QE report.
- Configure your thesis committee.
- Submit your Advancement to Candidacy Form (deadline is mid-August)

Appendix 2: Relevant Links

- [2023 - 2024 Handbook \(in progress\)](#)
- [Graduate Division Guidance on the QE](#)
- [CalCentral](#)
- [NST WEBSITE](#)
- [Graduate Division - Annual Doctoral Candidacy Review.](#)