

QE GUIDELINES FOR FACULTY

Mentor Responsibilities include:

- Meeting with their student(s) four times before the exam date:
 - a . Once in the fall semester to provide guidance and advice in the selection of an appropriate dissertation topic by the student;
 - b . eight weeks before the exam to provide constructive feedback on the outline of the thesis proposal, including premise, scope and specific aims;
 - c . five weeks before the exam to provide constructive feedback on the proposal first draft;
 - d . two–three weeks before the exam to participate in a “dress rehearsal” QE for the student
- Assist the student with identifying the premise of their research project, including material that reviews the history and development of the student’s immediate field as well as papers from the primary research literature that are directly relevant to the specific topic of the student’s work.
- Assist the student with identifying subjects and fields that are fundamental to the student’s preparation to pursue their research project.
- Provide guidance, resources and constructive feedback to the student on best practices for scientific writing.
- Advising the student on an appropriate scope of the QE proposal, and serving as a helpful sounding board for the student as they develop their Specific Aims and Research Approach. *The research mentor should refrain from providing detailed criticisms that would constitute writing or rewriting the proposal.*
- Provide constructive feedback on the student’s preparation for the QE, including comprehension of the: primary literature and knowledge of the subject matter in the discipline and its allied fields; oral presentation skills, including a “dress rehearsal” of the oral presentation; mastery of experimental logic, data interpretation and alternative approaches.
- Schedule a “dress rehearsal” for the student to practice their oral presentation in front of an appropriate audience of experts and non-experts. This presentation is typically scheduled as a group meeting; however, an ad hoc meeting can be arranged. The dress rehearsal should be scheduled for no later than three weeks prior to the student’s exam date.
- Scheduling the student to give oral presentations on the progress of the student’s work at regular group meetings and encouraging the student’s participation in journal clubs and other forums where research is the primary focus.
- Providing an assessment of the student’s research, progress, respective contributions and potential to be placed in their file for QE committee review. The assessment asks for a description of the student’s project, feedback on the student’s strengths and weaknesses, the respective contributions of the student and mentor to the written proposal, and expectations for how the student will perform on the exam.

Divisional Second-Year Advisor Responsibilities include:

- Meeting with the student to propose a chair, two inside members, and one additional Academic Senate Representative (ASR) faculty member (can be from inside MCB or outside), who will comprise the committee (to the maximum extent possible, the chair and the other committee members selected should be appropriate to the student’s thesis research, disciplinary area and the papers.)
 - *Tenured faculty will only serve as the chair to one QE committee each year, although volunteer requests to chair more than one committee at a time will be honored where appropriate.*
 - *The ASR position will be distributed among MCB faculty who do not hold other committee positions whenever possible.*
- Notify outside members of the request for committee service and confirm their participation.
- Strongly encourage the student to consult with the members of their committee, and other faculty, senior graduate students, and postdoctoral researchers, who are knowledgeable about the subject matter of the student’s thesis work and the papers.

[Note: The dissertation research and inside topic submitted to the Graduate Division should be broadly descriptive and not too narrowly focused. For example, if a student’s thesis work involves biochemical characterization of dihydrofolate reductase, the topic should be given as “Protein structure and function” or “Enzymic catalysis”.]

QE Committee Chair Responsibilities include:

Prior to the examination, the Chair should meet with the student at least once, and provide constructive feedback on the project three times (either by meeting or by sending written feedback):

- Timeline (see details below):

Countdown to Exam Date	Action
December	Faculty are notified of committees on which they are serving
At least nine weeks prior to the exam	Meet with student to discuss and provide constructive feedback on the proposal topic and scope
Six weeks prior to the exam	Student provides chair with outline of proposal
Five weeks prior to the exam	Chair provides feedback on the outline, including the acceptability of the project scope, premise and Specific Aims
Four weeks prior to the exam	Student provides chair with 1 st draft of proposal
Two weeks prior to the exam	Student sends proposal to all QE committee members
One week prior to the exam	Chair collects evaluations from committee members and informs the student whether the written proposal is “acceptable” or “unacceptable”.

- Notify any outside member about the QE format and the student’s chosen papers. Inform the member that they are encouraged (but not required) to take the lead in quizzing the student on one of the papers from their list for the examination.
- Meet with the student to discuss the outline of the proposal, including the topic, scope, Specific Aims, and outline of the research plan. The Chair’s approval of the outline is required for the student to write the proposal.
- Evaluate, and have other members of the committee evaluate, the dissertation research proposal no later than one week before the oral exam date. The Chair will collect committee members’ evaluations (if available) and inform the student and the GAO whether the proposal is “acceptable” or “unacceptable” to form the basis of the oral QE.
- If the thesis proposal is judged unacceptable, the chair has the responsibility of advising the student as to how the proposal needs to be revised to make it acceptable, but should refrain from providing detailed criticisms that would constitute participation in rewriting the proposal. For example, the student should be told that the proposal is inadequate because:
 - It has major flaws of logic and/or experimental design, and should be rethought.
 - It is based on limited or misinterpreted background information and, therefore, more reading should be done and the experiments redesigned in this light.
 - It is so poorly written and the ideas presented in such a confused fashion that the committee will not be able to identify the important issues on which to base the exam and, hence, it should be reorganized and rewritten.
 - It is too narrowly focused, is focused on a trivial issue, has no possibility of leading to a significant conclusion, or has too limited a line of experimentation, etc. and, thus, must be broadened to encompass a larger or more meaningful issue and expanded to include more incisive experimental approaches.
 - It addresses a question that is too diffuse and/or the experiments proposed do not really address the hypothesis to be tested and, therefore, it should be rewritten with attention to focusing on concrete issues.
- Encourage the student to join “study groups” and hold practice sessions (“pre-prelims”) with senior graduate students and/or postdoctoral researchers who are knowledgeable about both the subject matter of the student’s thesis work and/or the inside and outside papers.

During the exam:

- Provide the Committee with the opportunity to review the file of the student being examined (file will be sent by the GAO 1-2 days prior to exam date).
- Ensure that the examination process is conducted efficiently and impartially, and that accepted core competencies are adhered to in both the written and oral components of the examination. In the unusual circumstance that the student cannot complete the exam, propose an adjournment and schedule the completion of the exam.

- Collect written notes from all QE committee members, which summarize the strengths and weaknesses of the student's exam that form the basis of the members' votes.
- Oversee the voting procedures - four types are allowed by the Graduate Division:
 - a) Pass
 - b) Fail (with or without a recommendation for reexamination)
 - c) Partial Failure (student passed some topics but failed others; reexamination is mandatory, no sooner than 3 months)
 - d) Split Vote (when the committee cannot reach a unanimous decision on the outcome of the exam)
- In the case of a partial failure, the chair must write a letter to the student, with a copy to the Graduate Division, conveying information about performance, specifying which of the three areas were failed and what deficiencies must be remedied by the student.
- In case of failure or partial failure the chair must inform the student that the retake of the exam should be scheduled no earlier than 3 months from the date of the failure or partial failure and no later than the end of the following semester.
- In case of a split vote, each committee member must write a detailed assessment of the student's performance. These reports are submitted to the Administrative Committee of the Graduate Council for final decision as to whether the student has passed or failed.
- Ensure all members, including the chair, sign the "REPORT OF THE GRADUATE DIVISION ON THE QUALIFYING EXAMINATION FOR ADMISSION TO DOCTORAL CANDIDACY".

After the exam:

To ensure consistent standards for all MCB qualifying examinations, the chair will write an evaluation of the student's performance following the qualifying exam. Your evaluation should be based on the written notes of the committee members, including an analysis of the student's strengths, weaknesses, and recommendations of the committee. It is imperative that an honest appraisal be written, and that the strengths/weaknesses cited align with the committees' vote:

- A QE vote of "pass" should have a larger number of strengths than weaknesses. Minor weaknesses that are easily addressed by the student, in consultation with their research mentor, should not prevent a passing vote.
- A QE vote of "fail" should be based on major weaknesses across multiple parts on the exam, which indicates that the student is not prepared to advance to candidacy and embark on their dissertation research.
- A QE vote of "partial fail" should be based on moderate weaknesses in one specific area of the exam.
- THIS WRITTEN EVALUATION IS DUE NO LATER THAN A WEEK AFTER THE EXAM DATE.

A copy of the evaluation will be sent to the student and the student's mentor.

All QE Committee Members Responsibilities include:

Prior to the exam:

- Read carefully the written material submitted by the student, and evaluate its acceptability one week before the exam.
- If a committee member does not submit an evaluation of the written proposal prior to the one-week deadline, the Chair will record their evaluation as “acceptable”. In this case, the committee member cannot judge the written proposal to be unacceptable at a later date.

During the exam:

- Read the file of the candidate.
- **Examination on the thesis proposal is anticipated to proceed as it has in the past.** Students are expected to know and to be examined on their knowledge of the foundations of modern biological research, both in the theoretical and experimental senses, as well as determine if the student is able to think incisively and critically about their own research and that of other investigators. **This would include questions on (at least) the following:**
 - Rationale for the project, including the historical context of the work and how it fits into emerging fields.
 - Fundamentals of the principles underlying the thesis topic and experiments.
 - Experimental design along with a good understanding of the techniques and approaches to be used.
 - Anticipation of experimental outcomes and interpretations. An understanding of the experimental approaches to be taken under different scenarios for the results.
 - A discussion of the relevance of various individual "inside and outside" papers to the thesis topic. This could include, for example, relevant methods, experimental pitfalls, general or specific theories.
 - Discussion of "inside and outside" papers is expected to include (at least) the following:
 - Context of the experiments in the paper, including an understanding of the experiments that led up to the paper and some major conclusions that came after the paper. What was the importance of the paper to the field?
 - Fundamental principles underlying the experiments and conclusions
 - Experimental methods and logic underlying the conclusions
 - Integration of ideas in papers with thesis work

After the exam:

- In evaluating the student, it is useful to discuss how the students did in the areas listed above.

- Provide feedback to the chair for inclusion in the chair's report, which will be sent to the student, the student's mentor. In the event of a "Fail" or "Partial/Fail", the report will also be sent to the student's 2nd Year Adviser and the Graduate Division.

Any food at meetings of students with faculty mentors, including qualifying exams and thesis committee meetings, shall be provided by faculty, not students.