

BMEGG

PhD Qualifying Examination Guidelines

STUDENT RESPONSIBILITIES

- Prior to nomination of the QE committee, the student should discuss potential QE members with their Major Professor and Track Advisor.
- The QE committee should be formed at least 3 months prior to the exam. Form available at <http://gradstudies.ucdavis.edu/forms/qx.pdf>.
- The student should meet with each nominated QE committee member at least once before the scheduled examination. Frequency, duration, and number of meetings between an individual committee member and the student are decided by those two individuals. The purposes of the meetings should be to understand the committee member's expectations for the student's performance on the QE, to identify relevant material and approaches for preparation, and to familiarize the faculty with the student's proposed research.
- The student must contact each member of the QE committee to determine dates and times available for the QE, and must notify each QE committee member of the final date, time, and location of the QE.
- The student must reserve a room for the QE for at least 4 hours for the date and time; the typical time for the examination process is about 3 hours. Conference rooms in GBSF can be reserved at <http://somapp.ucdavis.edu/scheduling/GBSF/index.cfm>
- In coordination with the Chair of the QE committee, the student must provide each QE committee member with a written project proposal two to four weeks before the scheduled examination.
- The written proposal should be styled like an NIH formatted research proposal (R21), maximum of 15-20 pages in length excluding references with 12 pt font, single line space, and 1 inch margins.
- The student should prepare a 30 minute powerpoint presentation on the project proposal to be presents at the start of the examination.
- The student should not provide refreshments for the committee.

FACULTY RESPONSIBILITIES

- Each committee member is responsible for meeting with the student at least once before the scheduled examination. Frequency, duration, and number of meetings between an individual committee member and the student are decided by those two individuals. The purposes of the meetings are to communicate expectations for the student's performance for the QE, to offer the student relevant material and approaches for preparation, and to become familiar with the student's proposed research.
- The members of the QE committee share the responsibility for ensuring the QE is fair and reasonable.

FORMAT AND ADMINISTRATION OF THE EXAMINATION

- The general guidelines for administration of the QE, including responsibility of the QE committee chair, options for passing, not passing, or failing, and advancement to candidacy are available from Graduate Studies.
- All members of the QE committee must meet formally as a group with the student to administer the QE and to assess the student's overall performance on the examination.
- All committee members are required to attend (as required by the Academic Senate), and should actively participate, during the entire scheduled QE of the student.

ASSESSMENT OF STUDENT PERFORMANCE BY THE COMMITTEE

- The QE should attempt to assess the student's performance with respect to his/her ability of independent and critical analysis; ability to apply principles and knowledge in the subject area; knowledge of current and contemporary issues in the student's proposed research area; general knowledge of science; ability to integrate information and to reason based on examples or situations not necessarily related to his/her proposed research; and ability to hypothesize, extrapolate, and synthesize ideas.
- Although the student will have passed the written preliminary examination, and, therefore, will be assumed to possess a mastery of the material presented in the required BMEGG core courses, QE committee members may feel free in the course of the examination to address issues of mastery of core course material as well as other formal courses.
- The student should be able to demonstrate an appropriate depth and breadth of knowledge in the area of his/her research.
- Assessment of student performance should consider the student's knowledge of concepts in relevant preparatory courses, ability to defend methods and concepts, justify analyses, and critically assess the strengths and weaknesses of his/her proposed research, and to be able to provide appropriate reasoning behind the research. Committee members should refrain from making conclusions as to the ultimate disposition of the QE until the final phase of the process when the QE committee deliberates the final decision.
- Assessment of student performance should not be based on such factors as the nature or perceived scientific merit of the proposed research, future career goals, academic affiliations, faculty mentorship, or funding potential of the proposed research.
- The possible exam results are:
 - Pass – No conditions may be appended to a pass decision.
 - Not Pass – with the option to retake all or part of the exam within a specified time period; or to satisfy specific requirements.
 - No Exam – if at any time during the exam the committee determines that the student is unable to continue, whether due to illness or other extreme

circumstances. The chair must notify Graduate Studies of the circumstances of this decision.

- Fail – the exam may not be repeated.
- In order to declare a 'pass', the QE committee must be unanimous in agreeing that the student has passed the examination overall.
- A 'pass' on the qualifying exam indicates that the student's performance has been judged to be of sufficiently high quality to recommend him/her to be advanced to candidacy to pursue the formal research phase of their graduate education in biomedical engineering.
- A decision of 'pass' is unconditional in that no additional requirements of the student can be made as a condition for a 'pass'. For example, a student who performs poorly on one specific part of the QE cannot be expected to audit or take an additional course or complete additional instructional work as a condition for a 'pass'.
- In the event of a 'not pass' on the first examination, the chair will communicate to the student verbally, in the presence of all other committee members, and in writing the reasons for the 'no pass', the deficiencies that have to be fulfilled, and the specific time frame in which they must be fulfilled. The student may be required to retake all or part of the examination, as determined by the QE committee. The second QE must be scheduled by the chair of the QE committee, in consultation with the student, with all of the same members of the QE committee as soon as specific requirements, including any coursework, can be satisfied. The second QE should take place in the most expedient and specified time frame based on student deficiencies that need to be fulfilled, preferably within six months of the first QE.
- If, at any time during the QE, the chair of the QE committee determines that the student is unable to continue the examination, whether due to illness or other extreme circumstances, the committee may declare a 'no exam' and must notify Graduate Studies of the committee's decision and the circumstances. In the event of a 'no exam', the chair is responsible for rescheduling the QE, in consultation with the student, as soon as circumstances permit.
- The QE committee is not required to reach a unanimous decision. Procedures for handling a split committee vote are documented by Graduate Studies. In the event of a split committee vote, the chair of the QE committee will submit to Graduate Studies, with a copy to the student's file, a written summary of the committee vote and decision, accompanied by letters supporting the majority and minority viewpoints, and any documentation offered by the student. The letters from committee members should address the student's performance in the individual areas of the examination, as well as performance overall. Graduate Studies will render the final decision, as described in the Graduate Advisers Handbook.
- If the student 'fails' the first or second QE, then he/she may be disqualified from continuing in the PhD program.
- Four outcomes are possible for a second QE: 'pass', 'fail', 'no exam', or 'split vote'.
- Assessment of performance in the second QE should be based on evidence of substantial improvement in areas in which the committee considered the student

to be weak or 'not pass', as communicated to the student at the completion of the first QE.

RESPONSIBILITIES OF THE CHAIR OF THE COMMITTEE

- The chair of the QE committee facilitates the examination process and ensures that the process is conducted in a professional manner, is fair and reasonable, both to the student and to the BMEGG, and upholds the high academic standards for graduate education at the University of California. The chair is responsible for ensuring that committee members share in these responsibilities.
- At the beginning of the QE, the chair should review for the student and committee members the process to be followed and the expectations for the QE.
- In the presence of all the QE committee, the chair delivers the committee's final decision to the student.
- The chair of the QE committee signs the QE Report and the Advancement to Candidacy form indicating the final decision of the QE committee.
- In the event of a 'not pass' on the first QE or 'no exam' on the first or second QE, the chair is responsible for rescheduling the QE, in consultation with the student, as soon as specific requirements, including coursework, can be satisfied or circumstances permit.
- In the case of a split decision by the QE committee, the chair directs the process by which material is prepared and sent to Graduate Studies, including submission of a written summary of the committee vote and decision, accompanied by letters supporting the majority and minority viewpoints, and any documentation offered by the student.