

**Biomedical Engineering Graduate Group  
Ph.D. Qualifying Examination  
Guidelines For Faculty**

**COMMITTEE MEMBERSHIP**

- **The QE Committee shall include:**
  - Five members (6 maximum, if needed to satisfy a Designated Emphasis requirement)
  - At least 3 committee members must be members of the BMEGG
  - At least 1 committee member must be external to the BMEGG
  - Representation from both engineering and biology/medicine.
- The Chair of the QE Committee must be a member of the BMEGG.
  - Any BMEGG member that is not the student's major professor may serve as chair.
  - It is recommended that the Chair have prior experience serving on a BMEGG QE committee.
- All potential committee members must meet the Graduate Council Policy on [Service on Advanced Degree Committees](#) (GC1998-01).
  - In general, faculty that hold professorships (i.e., assistant, associate, and full professors) are eligible, see link above for more information.
  - Individuals from outside the University of California may be approved with the submission of an [External Committee Membership Application \(GS311\)](#).
  - Individuals who hold postdoctoral scholar appointments or UC Davis nonacademic staff titles are not eligible to serve on advanced degree committees.
- **The QE Committee shall be established with the submission of the [Qualifying Examination Application \(GS319\)](#).** This form requires the approval of:
  - The Graduate Program Advisor (assigned advisor with approval authority, not the major professor).
  - The Chair of the Designated Emphasis (if applicable)
    - Students wishing to complete a DE must submit the [Designated Emphasis Application \(GS323\)](#) prior to the Qualifying Exam.
  - The Graduate Program Coordinator (BMEGG Staff)
- If one committee member is expected to participate in the exam remotely, indicate that member (not the Chair) on the Qualifying Examination Application and attach the [Committee Member Remote Participation Request \(GS342\)](#).
- **Changes to committee membership** require submission and approval of a [Reconstitution of Committee Membership Request \(GS332\)](#) prior to the examination taking place.

## **FACULTY RESPONSIBILITIES**

- Review the [BMEGG Qualifying Exam Guidelines for Students](#).
- 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 purpose of the meetings is 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.

## **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 has applied the high academic standards for graduate education at the University of California are applied in the examination. 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.
  - The Chair shall not permit the QE to proceed if a member is not present or is not expected to be present during the entire scheduled examination.
- At the conclusion of the QE and committee deliberation:
  - The Chair delivers the committee's final decision to the student.
  - The Chair the QE Report 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.

## **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 dictated by [Graduate Council policy](#).

- 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. The QE will not be allowed to proceed if all members will not or cannot be present during the entire scheduled examination.
  - One committee member may attend remotely, if previously approved by Graduate Studies.
- The QE committee will agree before the presentation whether to hold questions until the end of the presentation or allow interruptions. It is the responsibility of the Chair and the entire committee to abide by this decision once communicated to the student.

### **ASSESSMENT OF STUDENT PERFORMANCE BY THE COMMITTEE**

- A committee member should refrain from making conclusions as to the ultimate outcome of the QE until the final phase of the process when the QE committee deliberates the final decision.
- The QE should attempt to assess the student's performance with respect to his/her ability for 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.
- The QE committee members may feel free in the course of the examination to address issues of mastery of core course material.
- Assessment of student performance should consider the student's 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.
- 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 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 must be fulfilled, and the specific time frame in which they must be completed. 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.
- If the QE committee is unable to reach a unanimous decision, the Chair will follow procedures for handling a split committee vote are documented by [Graduate Council Policy on Doctoral Qualifying Examinations](#).
  - Inform the student that the committee is divided.
  - 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.
  - The Administrative Committee of Graduate Council will render the final decision.
- If the student fails the first or second QE, then he/she may be disqualified from continuing in the Ph.D. 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.