

Year 2: Qualifying Examination (QE) & Program Expectations

The Qualifying Examination (QE) represents a critical step for students as they progress towards their Ph.D. candidacy. Students are eligible to take the exam after completing five quarters of residency. However, it is crucial that the QE is taken before the conclusion of the seventh quarter of graduate study. This timeline ensures that students are on track in their academic journey and allows them to focus on their research and dissertation work in subsequent years.

For further details, please visit the [Graduate Student Qualifying Exam Guidelines](#)

Timeline Breakdown

- November / December:
 - Committee Assignments
 - You will receive an email from the graduate program office with a committee selection form to be completed with your advisor.
 - Select five or more faculty members who would be suitable to sit on your committee.
 - This form needs to be signed by both you and your advisor and submitted to the graduate program office.
- January / February:
 - Committee Assignments by Director of Graduate Studies
 - Official committee assignment letters will be emailed with instructions for scheduling QE meetings.
 - The graduate program office will notify all faculty of their committee assignments.
 - QE Scheduling Meetings
 - Scheduling meetings will occur in January or February via Zoom.
 - Students will sign up for a 10-minute time slot with chemistry affiliated program assistants and committee members present.
 - A 2-hour time slot for your QE exam will be scheduled during this meeting.
 - Room locations will be assigned by the graduate program office once a date and time are finalized.
- February / March:
 - Presentations/Info Sessions to look out for:
 - DGS Presentation of QE expectations to cohort: presents faculty expectations of the Qualifying Exam benchmark. Sessions include:
 - Overview of presentation expectations.
 - Faculty expectations of student knowledge and presentation.

- DGS will answer questions about the QE process.
 - PLU & Graduate Liaison Committee student panel where senior students share their QE experiences. This is followed by an open dialogue session.
 - Graduate Program Office: Will address questions or concerns.
(Email gradasst@northwestern.edu for office hours).
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QE Presentations & Documentation Overview

The QE written document and oral examination aim to evaluate: (i) whether the student is making expected progress on their research problem(s), (ii) the student's overall understanding of Chemistry, especially in areas pertinent to their research, (iii) the student's ability to place their research project within the broader Chemistry field and their awareness of relevant literature, (iv) the student's capacity to outline plans for the short term (next 1-2 years) regarding their project, and (v) the likelihood that the student will produce an acceptable thesis within the next 2-3 years.

The student is required to write their QE document in the format of a research proposal, focusing on their thesis research, with the Preliminary Results section summarizing the work completed to date. This section will constitute a significantly larger portion of the document compared to a typical original research proposal. *The document must be submitted to the student's committee one week before the scheduled oral examination.*

Format of the Written QE Document

The QE written document will have 7 sections (total maximum of 13 pages, double-spaced, one inch margins, including abstract, figures and tables, but excluding references):

- (1) Title and abstract (1 page) The title and abstract should be descriptive of the total document.
 - a. In more detail: the portion of the work that has been accomplished, and the portion of the work that is proposed for the next 1 – 2 years of research.
- (2) Introduction, Background, and Significance of the Research.
 - a. Should include the “intellectual merit” of the project: what it will do to move the field forward and further fundamental understanding. It should also demonstrate the student's mastery of the literature in their field.
- (3) Scientific Objectives (“Specific Aims”).
- (4) Preliminary Results (no fewer than 5 full pages, including figures and tables). *This section is a summary of progress on the research problem thus far.*
- (5) Proposed Research (no fewer than 2 full pages, including figures and tables).
 - a. This section should include: A research plan for the next 1 – 2 years, including general objectives and specific experimental or theoretical plans.
 - b. A brief description of contingency plans.

(6) Summary and Conclusions

(7) References (as many as are appropriate; not included in the page count) - references should be the following format:

- a. Journal articles: Kramer, I.J.; Levina, L.; Debnath, R.; Zhitomirsky, D.; Sargent, E.H. Solar cells using quantum funnels *Nano Lett.* **2011**, 11, 3701-3705.
- b. Books: Odian, G. Principles of Polymerization; 4 ed.; John Wiley and Sons: Hoboken, NJ, 2004.

(8) The student decides how to partition the document between text and figures but should note that figures should not be seen as a replacement for text (i.e., the text must be a complete narrative).

(9) **All text must be 12-point, Times New Roman, double spaced, and type justified.**

- a. Pages must be numbered starting with the title/abstract page.
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QE Evaluation Form

The QE evaluation form ensures the examiners can systematically assess the candidate's performance in defined areas. The committee assesses the student's depth of knowledge and understanding of core concepts in chemistry and their specific project.

The form ensures a structured, consistent, and objective assessment of a student's preparedness for the rigors of advanced research. The form helps provide clear feedback to students, maintains standardization of evaluation, documents academic progress, and supports the overall goals of the graduate program.

Access the form here: [QE Assessment Form](#)