General Exam and Candidate Status

It is your responsibility to know the complete Graduate School requirements for the General Exam. This information is to serve as a guide.

Successful progression into candidacy for the Ph.D. demands mastery of research approaches and relevant scientific literature. It is expected that by the time of the examination the student will have performed sufficient preliminary work to allow the Supervisory Committee to assess the likelihood of successful completion of the proposed PhD. To this end, graduate students in Molecular Engineering are required to write up as well as present the plan of their thesis research. This requirement is intended to encourage thoughtful design of an effective research strategy and comprehensive understanding of the relevant issues at an early stage of the overall research effort.

Note: It is expected that the General Exam be completed prior to the end of Autumn Quarter (December) of the student's 4th year. If a delay is needed, a student may submit a petition, to be reviewed by the GSIC, for a delay of no more than one quarter.

The requirements and procedures for the exam are as follows:

(a) Finalize your Supervisory Committee members. These may be different from the committee members who oversaw your Preliminary Exam. Communicate the members of your final committee to the GPA. Committees must consist of at least 4 members including the Chair and GSR. The GPA will communicate this information to the Graduate School. You and the Supervisory Committee members will receive an email indicating the committee has been established.

(b) Discuss your research progress with your Research Advisor, and first obtain their approval to attempt the exam. Next, consult with all members of your Supervisory Committee. All members must agree that the student's background of study and preparation is sufficient and have approved the student to schedule a General Examination. If all members agree, then establish a date and time.

(c) At least four members of the Supervisory Committee must attend (including the chair, the GSR, and one other Graduate Faculty member). Please note that the Graduate School has specific rules for Virtual Exams and how to proceed if a Supervisory Committee member does not show up.

(d) At least 3 weeks prior to the exam, submit the General Exam Request Form. This must include date, time, and location. You may not submit this request until your committee is formalized within MyGrad.

(e) Send the GPA an email to let them know you've submitted your request, so they may go into the online system and provide departmental approval. You and your Chair will be provided a copy of the exam signature form, which your committee members will need to sign. You must return the signed signature form to the GPA within one week of the exam. These results will be submitted to the UW Graduate School. It is not until results are received and submitted to the graduate school, that the exam will is considered complete.

(f) At least 2 weeks prior to the exam, submit the written component of your exam describing progress to date and your plans to complete the dissertation to each member of your Supervisory Committee.

Written Exam Format:

The thesis proposal should be approximately 40-50 pages long (double spaced in 11-point or 12-point font) including additional pages of figures and references. It is expected that if no major changes occur in the direction of the student's research, parts of the written exam could eventually function as the introduction to the dissertation. It is necessary to have a clear view of the issues to be addressed in the dissertation. Furthermore, if the direction of the dissertation is not in sharp focus at the time of the examination, it is difficult for the Supervisory Committee members to accurately assess the student's readiness to proceed. For these reasons we strongly advise students to confer directly with all their committee members about the direction of their dissertation prior to commencing the written portion of the examination. While students should confer with their research supervisors about the appropriate weighting of each section, the content should generally be as indicated below:

- Research Plan
  Briefly describe the key issues and how you plan to achieve an experimental solution. You should specify one or more clear-cut hypotheses and define a few (2-5) specific aims that will enable you to test each hypothesis.
- Background
  Describe in detail how this problem has been studied in the past, what was learned, what remains unsolved, and why.
- Preliminary Findings
  Describe work you already have done on the problem and discuss your data. If relevant data are lacking, describe related kinds of work you have done and how the skills and findings learned from this work influences your plans for the proposed work.
- Methods of Procedure
  Detail the technical aspects of your planned work with regard to each of your specific aims. What specific experimental procedures will you employ? Where applicable, justify your use of the specific procedures chosen as opposed to others that may be available.
- Alternative Approaches
  You should be prepared in your oral examination to discuss how the broader scientific issues you are proposing to address in your work might be studied via another experimental method. Outline at least one such alternative approach here in your written preparation.
- Significance
  How might you expect your future findings to advance scientific knowledge more broadly and/or benefit society?

(g) 1 week prior to the exam, remind your committee members of the date, time, and location. Email is okay, but if you do not get a prompt response, follow-up with phone and/or personal contact.

(h) On the day of the exam, your committee chair will receive a Docusign containing the "General Exam Signature Form." Immediately following the exam they should convey the committees decision and sign. This will then trigger doucsign notifications to the remaining members of the committee.

(i) During the exam, you will give an oral presentation of your proposal. The committee will ask questions. After this you will be dismissed and the committee will discuss your performance. After all members have completed the docusign, the Graduate Program Advisor will convey the decision to the graduate school. The form must be completed within 1 week of the exam occurring.

Oral Exam Format:

The oral presentation general lasts approximately one hour (30 minutes for the student's presentation and 30 minutes for the question and answer period).

- Give a brief (20-30 minute) presentation of the thesis project: salient background, major questions and results to date, and projections for the immediate future.
- Answer questions (approximately 30 minutes) concerning the basis of experimental procedures employed, the conclusions drawn from the results to date, and possible alternate strategies.
- Be able to demonstrate an understanding of other experimental approaches being used to answer the same and related questions.
- Be able to describe and evaluate the major experimental and/or conceptual foundations of the thesis project.

(j) If the General Examination is satisfactory, the Supervisory Committee members who participate at the examination sign the Signature Form and return it to the GPA. If an examination is unsatisfactory, the Supervisory Committee may recommend that the Dean of the Graduate School permit up to a maximum of two additional reexaminations after a period of additional study. Any members of a supervisory committee who do not agree with the majority opinion are encouraged to submit a minority report to the Dean of the Graduate School.

(k) When the Graduate School approves candidacy, the student is designated as a candidate for the appropriate doctoral degree and is awarded a candidate certificate. After achieving candidate status, a student ordinarily devotes his or her time primarily to the completion of research, writing of the dissertation, and preparation for the

Final Examination.