

Comprehensive Exam Rules

I. Comprehensive Exam Requirements and Scheduling

Matriculated students are required to take the comprehensive exam within six months of completing their core class work. This exam will be offered twice annually, during both the Autumn and Spring semesters. Students wishing to take the exam should notify the preliminary exam coordinator or department graduate advisor during the first week of the Autumn or Spring semesters.

II. Comprehensive Exam Topics

Students will be evaluated for their knowledge and performance on questions relating to:

1. Physical chemistry and physical pharmacy, including solubility, equilibria, thermodynamics, mass transport, colloids and surface science
2. Physical organic chemistry, chemical kinetics and reaction mechanisms
3. Drug delivery, including targeting, internalization and intracellular trafficking
4. Biopharmaceutics and pharmacokinetics

III. Comprehensive Exam Procedures

Each student receives five questions that assess the student's knowledge of the Department's core curriculum. In particular, there will be one question for each of the core Pharmaceutics courses (PHCEU 7010, 7020, 7030 & 7040). These questions will be written and graded by the instructor(s) responsible for these classes. The fifth question will test the student's knowledge of PHARM 7113. This question will be written and graded by Department faculty members selected by the preliminary exam coordinator. Students will be required to submit written responses to the questions within ten days from the date of distribution. No revisions will be accepted after the ten-day deadline.

Faculty will have two weeks from the date that exam answers are received to grade them. Grading will be on a scale of 0-100, with 70 considered a passing score. Students may appeal the grading of a particular question. In such cases, three faculty members (other than those who wrote the question) will be selected by the preliminary exam coordinator to grade the student's response.

Students passing all written questions will receive an unconditional pass for the comprehensive exam.

Students failing to pass one or two written questions will receive a conditional pass for the comprehensive exam and will have one month to submit correct answer(s). The faculty will then have one month from the date that the revised answers were received to evaluate them. Failure to answer one or two questions correctly in the resubmission, or missing any deadlines, will require the student to repeat the entire comprehensive exam at the next scheduled date. The second comprehensive exam will be final.

Students failing to pass three questions will fail the comprehensive exam. These students will be required to repeat the entire comprehensive exam at the next scheduled exam date. The second comprehensive exam will be final. Failure to pass the second comprehensive results in dismissal from the program.

IV. Preliminary Exam Procedures

In order to become Ph.D. candidate, a student must pass a preliminary examination that consists of both a written research proposal and an oral examination. The student should consult with his or her research advisor about a suitable topic for the research proposal. The topic may be based on either (1) their own research with at least one new aim not proposed by their advisor, or (2) new, original research (not previously submitted for funding) that falls within the broad categories listed in Section II, above.

The proposal will be evaluated by a preliminary examination committee that consists of four professors from the student's supervisory committee, but not the student's research advisor. The department chair shall select one of these four as the chair of the preliminary exam committee. Committee member substitutions are allowed at the discretion of the department chair.

The research proposal should be in NIH format (SF424 or PHS398) and include the following sections – abstract, table of contents, first year budget, budget for entire project period, biographical sketch, other support, resources and facilities, research plan and references. The research plan shall consist of four subsections – specific aims, background and significance, preliminary data (typically from the literature), and experimental design and procedures and must comply with NIH length. Students may use proposals developed for a grant writing class, but still must include one new aim not proposed by their advisor. Proposals should be written for a 3-year timeline with the student as principal investigator. A modular budget should be included. The student's advisor (or other committee members) may read the written proposal and provide feedback. However, the student must develop the original aim (as stated in 1 above) or the original research (as stated in 2 above) on his/her own.

The proposal must be defended within a year from the date that the student was informed of his/her comprehensive exam passing grade. In the case of a conditional pass, this deadline will not be extended by the time required to comply with the conditions. Students who do not comply with this deadline will have only one chance to pass their exam. The student shall arrange a date for the proposal defense and distribute the proposal to the committee members and a file copy to the department office at least one week before the meeting. On the day of the defense, the student will first give an oral presentation (approx. 1 hour) of the proposal. This presentation is open to the public. Following the presentation, the committee will conduct the oral examination in closed session with the student. Each committee member will be given an opportunity to question the student about the proposal and/or other topics related to the broad categories listed in Section II, above. The student's research advisor may attend the oral presentation, but not the closed session. Immediately after the oral examination, the committee will meet and evaluate the student's performance. Three outcomes are possible – pass, conditional pass and fail. These outcomes are described in the paragraphs below. The chair of the preliminary examination committee will write a letter informing the student of the outcome of his/her examination. This letter will also document reasons for a conditional pass or a failure. The letter will be sent within one week of the examination to the student, his/her advisor, and the department chair.

Pass

Students who receive a pass will advance to Ph.D. candidacy. No further exam work is required—the student has satisfied all exam requirements. The committee must unanimously agree upon an unconditional pass.

Conditional Pass

Students judged to be deficient in certain areas of the proposal and/or the oral examination will receive a conditional pass and will have 3 weeks from the date of their proposal defense to

correct deficiencies in the proposal and/or fulfill other requirements as stipulated by the committee. Students may solicit feedback from their committee members and advisor while revising their proposal. The revised proposal should include an introduction section that details, all substantive changes made in the revised proposal (see PHS Form 398 for detailed instructions). The revised proposal should be submitted to committee members and the Department office on or before the 4-week deadline. This submission will be final (i.e., subsequent revisions will not be considered). Committee members will have 3 weeks to review the revised proposal. Un-reviewed proposals will automatically receive a pass. The final decision (pass or fail) will be decided by a majority of the committee. In case of a split vote, the committee chair will make the final decision. In the event of failure, or if the student's 4-week deadline is missed, the student will have one more chance to retake the exam.

Failure

Students who fail the preliminary exam will be required to submit and defend a new research proposal. The second submission will be final. The due date of this second submission is at the discretion of the committee, but shall be no longer than 6 months from the date of the original proposal examination date.