

GUIDELINES FOR GRADUATE STUDY

**DEPARTMENT
OF
INDUSTRIAL & PHYSICAL PHARMACY**

**College of Pharmacy
PURDUE UNIVERSITY
FALL 2023**

(August 14, 2023)

Introduction

The Department of Industrial and Physical Pharmacy's ***Guidelines for Graduate Study***

<https://www.ipph.purdue.edu/sites/www.ipph.purdue.edu/files/phd-program/guidelines.pdf>

supplements the policies and procedures of the Graduate School and the College of Pharmacy. As graduate students at Purdue University, you are members of the Graduate School. The Graduate School has certain policies and procedures which are outlined in the publication ***The Graduate School: Policies & Procedures for Administering Graduate Student Programs***

<http://catalog.purdue.edu/content.php?catoid=9&navoid=1058>
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You are also members of the College of Pharmacy and the College has a series of additional guidelines and procedures which are outlined in the publication ***Purdue University College of Pharmacy Policies and Regulations Manual for Graduate Students and Postdoctoral Staff***.

<https://www.pharmacy.purdue.edu/current-students/resources/gradmanual>

The departmental document outlines a third tier of policies and procedures—departmental policies and procedures that have been established by the faculty of the Department of Industrial and Physical Pharmacy. Upon reading these procedures and requirements, you will realize that the faculty of the department have set basic goals for all IPPH graduate students. We hope that each of you will set higher goals for your own personal and scientific development. The faculty of the department will do everything possible to assist you in achieving those goals.

<https://www.ipph.purdue.edu/sites/www.ipph.purdue.edu/files/phd-program/guidelines.pdf>

Selection of a Major Professor

It is essential that each graduate student select a Major Professor early in their graduate career. This selection process is begun by meeting with faculty members in the department. These interviews will help you to become acquainted with the faculty members and to learn about their research interests. As you refine your preference(s) for Major Professor, you may wish to talk more than once with those faculty members of particular interest. Based on the preferences for Major Professor from the student, as well as

well as on the choices and openings in the faculty's research group, the Department Head or the Director of Graduate Studies will inform you about the faculty member who will serve as your Major Professor. You need to identify three faculty members in the department as your three preferences for Major Professor. You must communicate (via email) your faculty preferences to the Director of the IPPH Graduate Program by September 30. Exceptions require written approval (e.g., email) from the Department Head. This will permit you to formulate a plan of study (POS) with your Major Professor and your Advisory Committee so that you are able to select the proper courses for your second year in the department. Registration for the Spring semester coursework occurs in October. The precise date varies from year to year but it is around October 15. Therefore, it is required for you to meet with IPPH faculty members early during your first Fall semester in the program. Until you join your Major Professor's research group, the Department Head or the Director of the IPPH Graduate Program will serve as your interim advisor.

Oral English Proficiency

All IPPH graduate students for whom English is not their first language are required to take the Oral English Proficiency Test. In the event your test score is below passing, you must complete ENGL 62000 Classroom Communication for International Graduate Students and ENGL 62100 Written Communication for International Graduate Students.

Educational Background and Qualifications

Independently of their previous educational background, all graduate students in IPPH are required to be(come) adept in different areas related to the pharmaceutical sciences. A non-exhaustive list of such disciplines includes mathematics, general chemistry, physical chemistry, statistics, biopharmaceutics, pharmacokinetics and pharmaceutical unit operations. This is an educational priority of the department, aimed at preparing you to conduct research in the department to start, and subsequently to join the industrial, academic or regulatory workforce in the field. Examples of these academic requirements include one year of plane analytical geometry and calculus (e.g., MA 16100 and MA 16200 or higher level), one semester of physical chemistry (e.g., CHM 37300 or higher level), and one semester of statistical methods (e.g., STAT 511 or higher). Before the start of your first

semester as an IPPH graduate student, the Director of Graduate Studies will review your academic transcripts and will provide you with your individual departmental coursework requirements. Completion of your coursework assignment is required in order to schedule your OPE (Oral Preliminary Examination), whose successful completion will give you the status of Ph.D. candidate.

The department requires 30 credit hours of coursework other than IPPH 699 (28 credit hours of Purdue University West Lafayette courses plus 2 IPPH 696 seminars for credit). Note that is in alignment with Purdue Graduate School policy, graduate credit is not given for 200XX level courses, and up to 6 graduate credits are given for 300XX level courses (e.g., CHM 37300 and CHM 37400) will be counted toward the requirement of 30 credit hours).

Academic Performance during the First Year of Study

You must take a full course load (9 hours of didactic courses) during each semester of your first year and achieve a grade of B or better in each course. If you do not achieve a B grade or better in courses taken during the two semesters of your first year, the department will review your case, and you may be asked to leave the program.

Plan of Study

You will be required to file a Plan of Study (POS) tailored to your research interests and the goals of your Advisory Committee. Your POS needs to be submitted electronically via *myPurdue* by the first week of May (your second semester in the program). The POS will contain the proposed courses you will be taking during your studies in the department as agreed by your Advisory Committee. The link to enter your proposed courses is found on “*myPurdue*” <https://mypurdue.purdue.edu/>

For students seeking a joint PharmD/PhD degree, a POS must be developed, such that it meets all departmental, college, and university requirements for both degrees.

A Plan of Study (POS) committee meeting with student will be required to be held and documented between oral preliminary exam and final defense.

Academic Performance during the Second and Subsequent Years of Study

A cumulative GPA of 3.0 or above is required for maintaining the status of graduate student in good standing in the department. After one semester with a GPA below 3.0, the student is placed on departmental probation. When recommended by either the Director of the Graduate Program or by the Major Professor, the department will review the student's grades after each semester. In such cases, the student's Advisory Committee shall meet with the student and submit a written report to the department head, with copy to the student, supporting a recommendation for the continuation or termination of the student's enrollment in the program.

Each student is required to receive a grade of A or B in all departmental courses. A student receiving a C grade in a departmental course may have to re-evaluate his/her commitment to graduate study in the department. In addition, the Advisory Committee may require a minimum B grade for other selected courses, which will be so noted in the Plan of Study.

Oral Preliminary Examinations

Successful completion of IPPH 58000 (Physical Chemical Principles), IPPH 58300 (Advanced Biopharmaceutics), IPPH 56200 (Pharmaceutical Processes), IPPH 574 (Pharmaceutical Biotechnology), as well as an oral preliminary examination (OPE) are required of all students. The required IPPH courses must be taken during the student's first or second year, depending upon the student's academic background.

The oral preliminary examination (OPE), which emphasizes an experimental plan, as well as the student's command of the published literature on the subject, should be taken within three years of starting the program. The OPE is based on two separate documents written by the student: a research proposal and a literature review on the subject. Accordingly, the oral examination consists of two parts. One part is focused on the student's ability to present and defend the proposed project (research proposal document). The other part is focused on the student's mastery of the related published literature (literature review).

The research proposal requires initial or preliminary data presentation as support for the proposed project. The proposal should follow one of the formats defined in Appendix A as indicated by your major professor. The proposal document must have a

length of no more than 18 pages, including figures and tables, without counting the References section. The document must be written using Arial font size 11 or Times New Roman font size 12. All margins should be 1 inch in length and the line spacing must be at least double spaced. This proposal will serve as a basis for questions during the first part of the OPE, where the student is being tested for their individual ability to defend the scientific merits of the research being proposed. This means that the examination is not limited to the specifics of the proposal. The student taking the OPE is required to demonstrate the ability to prepare and give a full and clear presentation about the proposed research project, in a time period no longer than 30 minutes. Please note that there is no limit to the number of auxiliary (not included in the formal presentation) slides the student can have ready and use in order to help in answering specific questions from the examination committee. However, the formal presentation is limited to 30 minutes, followed by a 45 minute period of questions from the examination committee.

The literature review document should be written in the form of a critical mini-review, as if it was to be submitted for publication to a peer reviewed journal. The literature review should be no more than 60 pages long including text, figures and tables, without counting the References section. The document must be written using Arial font size 11 or Times New Roman font size 12 and double spaced. Margins should be 1 inch in length.

The second part of the oral examination consists of a 45 minute period of questions focused on the material covered in the “mini-review” document.

You must submit a copy of your research proposal and your critical literature review to each member of your Advisory Committee at least two weeks prior to the day of the OPE.

The Department of Industrial and Physical Pharmacy policies specify that the preliminary examination may be repeated once, but if it is not passed on the second attempt, the student may not continue in the graduate program. Thus, you may have only one failing grade on the oral exam in this department.

Research Performance

The early selection of your Major Professor is important not only from the standpoint of course registration but also from the standpoint of initiating a research project early in your graduate career. Once your research is in progress your Major Professor and your Advisory Committee (listed on your Plan of Study) will monitor your research progress.

The research performance of graduate students is evaluated each semester by their Major Professor. A “S” (satisfactory) grade in IPPH 69900 every semester is essential for maintaining the status of graduate student in good standing. Based on your research performance during the semester, if requested by your Major Professor, it is required that you meet with your Advisory Committee to discuss the progress of your research. The Advisory Committee will work on identifying milestones to attain in your research, in order to reduce the chances of getting a “U” (unsatisfactory) grade in IPPH 69900. Your Major Professor will provide you, along with the Advisory Committee, and the Director of Graduate Studies, a summary of the points discussed at the meeting.

A “U” grade in IPPH 69900 will automatically place the student under academic probation. It will also trigger a meeting of the student with their Advisory Committee in order to advise the student on research milestones required in order to be reclassified as a student in good standing. The Advisory Committee will provide the student and the Director of Graduate Studies with a summary of the points discussed at the meeting. Two semesters with “U” grade in IPPH 69900, whether consecutive or not, constitute grounds for dismissal from the IPPH graduate program.

IPPH PhD students should submit one manuscript to a peer-reviewed journal as a requirement for the PhD prior to their final defense. In extenuating circumstances, the graduate student may petition the Director of Graduate Studies for a waiver of this requirement.

Departmental Seminar Program (IPPH 69600)

Each student will be required to present a first seminar by the end of the fifth semester in our graduate program. The seminar should

be carefully thought out and prepared by the student. The student may present a literature review and/or literature review and research results. Departmental seminars are evaluated by the faculty and are the basis for a grade in seminar during that semester as well as serving as criterion for evaluation of new graduate students.

Each student is also required to present a second (IPPH 69600) seminar on their graduate research, near the end of their studies. The second departmental seminar is also a Doctoral Seminar, i.e., it is a part of the student's doctoral defense. Accordingly, the seminar is open to the interested public and the appropriate announcement will be made university-wide.

Attendance at all seminars is mandatory for all students unless excused by your Major Professor with concurrence of the faculty member in charge of seminar.

Final Defense

The final defense will be open to the public for the first hour which will consist of 45 minutes of presentation, 10 minutes of questions, and 5 minutes for transition. The second hour will be closed.

Outside Employment

Graduate school is a full-time endeavor, and outside employment of any kind is discouraged. However, if you choose to pursue outside employment, please read Section 7 of the current edition of the ***Purdue University College of Pharmacy Policies and Regulations Manual for Graduate Students and Postdoctoral Staff***. <https://www.pharmacy.purdue.edu/current-students/resources/gradmanual>

Appendix A

Useful Proposal Format Elements for Designing IPPH OP Format

| NSF | NIH (R01, R03, R21) | AAPS |
|--|-----------------------------------|---|
| Table of Contents | Table of Contents | |
| Project Summary/Abstract (one page) With separate headings for: <ul style="list-style-type: none"> • Overview • Intellectual Merit and • Broader Impacts | Specific Aims (one page) | Hypothesis Specific aims |
| Project Narrative/Description (GPG) Content The Project Description should provide a clear statement of the work to be undertaken and must include: <ul style="list-style-type: none"> • Technical objectives for the period of the proposed work • Expected significance • Relationship of this work to the present state of knowledge in the field • Any work in progress by the PI under other support or preliminary data • Plan of work, including the broad design of activities to be undertaken, • Experimental methods and procedures. • Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified. These issues apply to both the technical aspects of the proposal and the way in which the project may make broader contributions. <ul style="list-style-type: none"> • Intellectual Merit • Broader Impacts | Research strategy | <ul style="list-style-type: none"> • Design and Approach along with preliminary data if available, originality and potential impact. |
| Timeframe | Time | |
| Bibliography and References Cited | Bibliography and References Cited | |