



THE UNIVERSITY of  
**MISSISSIPPI**

Department of Pharmaceutics and Drug Delivery  
School of Pharmacy

## **GRADUATE STUDENT HANDBOOK**

UNIVERSITY OF MISSISSIPPI  
SCHOOL OF PHARMACY  
DEPARTMENT OF PHARMACEUTICS & DRUG DELIVERY

## **Vision**

Our vision is to be nationally and internationally recognized as a center of excellence in pharmaceuticals and drug delivery, as distinguished by our innovative work in research and education.

## **Mission**

Our education / training mission is to provide student pharmacists, graduate students, postdoctoral fellows, and industrial scientists and engineers with a fundamental understanding of the physicochemical and biopharmaceutical aspects of dosage form design, evaluation and manufacturing.

Our research mission is to conduct innovative research across the broad discipline of pharmaceuticals / biopharmaceuticals and transfer new knowledge to external partners to improve drug delivery and patient care.

We will accomplish this by:

- Recruiting, developing and retaining outstanding faculty, research scientists, graduate students, and support professionals.
- Leveraging drug delivery expertise and emerging technologies to increase external support and address industry and regulatory agency needs.
- Ensuring graduate and postgraduate education programs address ongoing and arising critical translational and operational issues in pharmaceutical R&D and manufacturing.
- Expanding federal funding and strategic partnerships and collaborations with industry, regulatory agencies, non-profit organizations and other universities.

## **PDD Faculty Members**

Dr. Michael A. Repka, Chair & Graduate Program Coordinator

Dr. Soumyajit Majumdar

Dr. S. N. Murthy

Dr. Seongbong Jo

Dr. Walter. G. Chambliss

Dr. Chalet Tan

Dr. Mahavir Chougule

Dr. Eman A. Ashour

## **General Policies for Graduate Students**

### **Introduction**

The objective of the graduate programs in the Department of Pharmaceutics and Drug Delivery (PDD) is to provide a multi-disciplinary program of courses and research activities suitable to prepare students for a career in teaching, research or administration. Because of the varied interest within the Department, it is expected that the student will be keenly aware of current developments in all aspects of the broad discipline of pharmaceutics. The requirements listed here are minimum requirements of PDD and supplement those of the Graduate School of the University of Mississippi. It is the responsibility of the student to be thoroughly familiar with the Graduate School regulations as found in the Graduate Catalog. ([www.olemiss.edu/depts/graduate\\_school](http://www.olemiss.edu/depts/graduate_school)).

### **Admission to the Program**

Admission to the graduate program in PPD is open to superior students with a bachelor or higher degree of science in pharmacy, chemistry, biology, chemical engineering, biotechnology or a related area. A "B" average or better in undergraduate coursework is required for consideration for admission. International students must show evidence of achieving a minimum score of 550 on the Test of English as a Foreign Language (TOEFL). Admission is competitive, so it is unlikely that all students meeting the minimum requirements will be admitted.

### **Degree Programs**

Three graduate programs are available. The Master of Science (M.S.) in Pharmaceutical Science (with emphasis in Pharmaceutics), Professional Master of Pharmaceutical Sciences (with emphasis in Industrial Pharmacy) and the Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences (with emphasis of Pharmaceutics). Students may be admitted into any of these programs.

#### **I) Master's of Pharmaceutical Sciences with an emphasis in Pharmaceutics**

A Master's of Pharmaceutical Sciences with emphasis in pharmaceutics requires students to complete a minimum of 24 semester hours of course work and 6 hours of thesis.

### **Core Courses**

1. Advanced Pharmacokinetics (Phar 760)
2. Graduate Student Survival Strategies (BMS 601)
3. Statistics and Experimental Design (Bisc 504 or HP 626)
4. Product Development (Phar 749)
5. Formulation Development (Phar 650)
6. Advanced Pharmaceutics (Phar 741).
7. Seminar in Current Pharmaceutical Topics (Phar 543, 544)

8. One or two courses in Chemical Engineering and/or Chemistry & Biochemistry depending on course availability:
  - a) Surfactant Science and Applications (ChE 547)
  - b) Introduction to Polymer Science (ChE 543)
  - c) Fundamentals of Colloidal Surface Science (ChE 545)
  - d) Coating Materials Processing and Applications (ChE 597)
  - e) Principals of Physical Chemistry I (Chem 535)
  - f) Physical Biochemistry (Chem 534)
9. Thesis (Phar 697)

### **Elective Courses**

1. Analytical Pharmaceutics (Phar 735).
2. Applied Pharmaceutics (Phar 750)
3. Stability of Pharmaceutical Systems (Phar 744).
4. Pharmaceutical Manufacturing (Phar 658)
5. Problems in Pharmaceutics (Phar 541)
6. Regulatory Science I (Phar 651)
7. Regulatory Science II (Phar 652)

Additional courses may be required by the student's research director and/or advisory committee. If a required course is unavailable, the Pharmaceutics Department graduate faculty may approve an alternative course for a particular student.

Prior to the student's thesis defense, the student must have a minimum of one completed manuscript ready for submission to a refereed journal for publication. A thesis based upon experimental work in the general area of pharmaceutics is also required.

## **II) Professional Master's of Pharmaceutical Sciences with an emphasis in Industrial Pharmacy**

A Master's of Pharmaceutical Sciences with emphasis in Industrial Pharmacy requires students to complete a minimum of 28 semester hours of course work and 8 project hours.

### **Core Courses**

1. Advanced Pharmacokinetics (Phar 760)
2. Graduate Student Survival Strategies (BMS 601)
3. Statistics and Experimental Design (Bisc 504 or HP 626)
4. Product Development (Phar 749)
5. Formulation Development (Phar 650)
6. Advanced Pharmaceutics (Phar 741)
7. Seminar in Current Pharmaceutical Topics (Phar 543, 544)
8. One or two courses in Chemical Engineering and/or Chemistry & Biochemistry depending on course availability:

- a) Surfactant Science and Applications (Ch E 547)
  - b) Introduction to Polymer Science (Ch E 543)
  - c) Fundamentals of Colloidal Surface Science (Ch E 545)
  - d) Coating Materials Processing and Applications (Ch E 597)
  - e) Principles of Physical Chemistry I (Chem 535)
  - f) Physical Biochemistry (Chem 534)
9. Special Projects (Phar 696)

### **Elective Courses**

1. Analytical Pharmaceutics (Phar 735)
2. Applied Pharmaceutics (Phar 750)
3. Stability of Pharmaceutical Systems (Phar 744).
4. Pharmaceutical Manufacturing (Phar 658)
5. Problems in Pharmaceutics (Phar 541)
6. Regulatory Science I (Phar 651)
7. Regulatory Science II (Phar 652)

### **III) Doctor of Philosophy in Pharmaceutical Sciences with an emphasis in Pharmaceutics**

The Ph.D. of Pharmaceutical Sciences with emphasis in pharmaceutics requires students to complete a minimum of 36 semester hours of course work and 18 hours of dissertation.

### **Core Courses**

1. Product Development (Phar 749)
2. Statistics and Experimental Design (Bisc 504 or HP 626)
3. Analytical Pharmaceutics (Phar 735)
4. Advanced Pharmaceutics (Phar 742)
5. Surface Phenomena (Ch E 545)
6. Stability of Pharmaceutical Systems (Phar 744)
7. Advanced Pharmacokinetics (Phar 760)
8. Graduate Student Survival Strategies (BMS 601)
9. Applied Pharmaceutics (Phar 750)
10. Seminar in Current Pharmaceutical Topics (Phar 543, 544)
11. Dissertation (Phar 797)

### **Elective Courses**

1. Formulation Development (Phar 650)
2. Pharmaceutical Manufacturing (Phar 658)
3. Problems in Pharmaceutics (Phar 541)
4. Regulatory Science I (Phar 651)
5. Regulatory Science II (Phar 652)
6. Surfactant Science and Applications (ChE 547)
7. Introduction to Polymer Science (ChE 543)
8. Fundamentals of Colloidal Surface Science (ChE 545)

9. Coating Materials Processing and Applications (ChE 597)
10. Principals of Physical Chemistry I (Chem 535)
11. Physical Biochemistry (Chem 534)

Additional courses may be required by the department chair, the student's faculty advisor, or an advisory committee. If a required course is unavailable, an alternative course for a particular student may be approved on a case-by-case basis.

### **Admission to Ph.D. Candidacy - Comprehensive Exam**

To be eligible for Ph.D. candidacy, the student must:

1. Complete all required PPD coursework in the core curriculum and any additional coursework required by the research director and/or the dissertation committee.
2. Pass a written exam with a section contributed by each of the faculty with a full-time academic appointment in PPD. If the student fails one of the sections of the exam, he or she will be allowed to retake a second exam from that faculty member. If a student fails more than one section of the exam, he or she will be terminated from the Ph.D. program and allowed to enter one of the Master's Programs.

### **Transfer from the M.S. to Ph.D. Program**

With the approval of the graduate faculty of the department, a student may transfer from the M.S. degree program into the Ph.D. degree program once they have completed the degree requirements for the M. S. program.

Prior to the student's dissertation defense, the student must have a minimum of one completed manuscript ready for submission to a refereed journal for publication. A dissertation based upon experimental work in the general area of pharmaceuticals is also required.

### **Advisory Committees for M.S. and Ph.D. in Pharmaceutical Sciences with an Emphasis in Pharmaceuticals**

All students in the Ph.D. and M.S. in Pharmaceutical Sciences with an emphasis in Pharmaceuticals must select a major professor and have an advisory committee approved by the department Chair before the end of their second semester in a PDD program.

**Thesis committees** of the University of Mississippi must consist of at least three faculty members from the discipline in which the degree is sought; each must be a member, Associate or Full, of the Graduate Faculty.

**Dissertation committees** of the University of Mississippi must consist of at least three faculty from the discipline in which the degree is sought, plus one member external to the discipline; each must be a member, Associate or Full, of the

Graduate Faculty, but the Chair must be a Full member or have received the special and specific consent of the Graduate Council.

Members of thesis and dissertation committees, as described above, may continue their involvement with those committees after leaving the University; Chairs of thesis and dissertation committees who leave the University may serve as Co-Chairs. Only appointed members of thesis and dissertation committees may be identified on the signature page even if they cannot be present at the thesis or dissertation defense. Auxiliary members of thesis and dissertation committees who are not members of the University of Mississippi faculty may be appointed to committees as non-voting members but may not be identified on the signature page.

The role of an advisory committee is:

1. To advise the student about coursework and research. At the first committee meeting, the committee determines what the student's coursework requirements will be. This coursework plan will be placed in the student's permanent file in the department;
2. To administer the thesis and/or dissertation defenses;
3. To approve the student's research prospectus;
4. To conduct annual reviews and evaluations of the student's research project.

### **Annual Student's Progress Report**

Once each year the Graduate faculty of PPD will review the progress of each graduate student. If it is the consensus of that faculty that the student is unlikely to complete a program satisfactorily, he or she may be advised to leave the program. These reviews will be held at the end of the Spring semester. The PPD Chair will discuss the results of this review with the student and inform the student of any changes in status, appointments, etc. as a result of this review.

### **Academic Progression Policies and Procedures from the Graduate School Good Standing**

Students are expected to maintain a grade point average of 3.0 or better on all graduate level work. The Graduate School reviews the academic progress of all students at the end of each semester and identifies those who have a cumulative GPA of less than 3.0. Students who are in Conditional standing are reviewed at the end of their first nine hours of graduate work. Failure to achieve good standing can lead to a hold on enrollment or a drop to Non-Degree status. If a hold is placed on enrollment, the student must visit the Graduate School to discuss matters and to possibly have the hold overridden.

Where a student has three I or IP grades outstanding, the student is not permitted to enroll in additional courses.

### **Comprehensive Exam and Candidacy**

All doctoral degree students must successfully complete a comprehensive examination. The rules related to eligibility to take the exam are given in the Graduate Catalog. Included in the Appendix is a form to be used to request authorization for taking a comprehensive exam. Once a student has passed the comprehensive exam, he or she becomes a candidate for a doctoral degree. A candidate is required to be continuously enrolled for at least 3 hours during two semesters within a calendar year.

### **18 Hours Dissertation Policy and Continuous Enrollment**

Prior to graduation, every doctoral student must complete 18 hours of dissertation credit. After a student is admitted to candidacy, enrollment--in course work or dissertation--must be continuous, including an enrollment of at least 3 hours in the term in which the degree is granted (1 hour of enrollment during the summer will suffice for graduation, if the summer semester is not to be used to fulfill the continuous enrollment requirement). Continuous enrollment is defined as enrollment for at least three semester hours during two of the three terms of the calendar year. The calendar year includes the fall and spring semesters and the summer session, enrollment in one of the two summer terms constituting a summer session enrollment. A doctoral student failing to maintain continuous enrollment will be assessed a fee equal to six hours of tuition for each semester of their suspended enrollment. In departments requiring an internship for the doctorate, continuous enrollment is not considered to be interrupted by enrollment in the internship. However, 18 hours of dissertation must still be presented, including 3 hours of enrollment during the semester the degree is awarded.

### **Dissertation Prospectus Review Procedure**

There must be at least one full semester or calendar equivalent between submission of the prospectus and the semester in which the final dissertation defense is scheduled.

- A. A written dissertation prospectus will be required of every doctoral student.
- B. An oral defense of the prospectus will be required.
- C. A committee will be formed to evaluate the merit of the prospectus. This committee will also serve as the dissertation committee.
- D. The committee should consist of at least four members. One member, nominated by the dissertation chairman, will be external to the discipline. All members of the committee shall have equal voting rights.



- E. A single negative vote in the committee will require negotiation among the committee members in order to achieve reconciliation of the point(s) of objection.
- F. Only if the committee cannot agree on the merits of the prospectus and, through reasoned discussion, accept the prospectus unanimously, a review process by a committee of the department/school will be invoked.
- G. Although a unanimous vote of the committee is necessary in order to accept the prospectus, a majority vote only will be required on the final dissertation defense.
- H. An approved copy of the prospectus will be filed with the Graduate School immediately following the defense.
- I. Any research involving human subjects must be approved by the Institutional Review Board. Any research using animals must be approved by the IACUC. To determine if these provisions apply, please contact the IRB or IACUC through the Office of Research at 7482 for applications and assistance.
- J. When any member of the committee believes that a substantial change in the research plan has been made, the committee will be reconvened. Unanimous approval of any substantial revision is required. A report of substantial changes will be filed in the Graduate School.
- K. Any committee member who does not sign the final dissertation must file an objection with the Graduate School.

### **Final Exam for Master`s and Doctoral Degree**

Final oral or written examinations for a masters or doctoral degree must be scheduled no later than 14 days, prior to the intended examination date. These exams must be scheduled on or before the last day of class (i.e., a final exam cannot be scheduled during the regular University testing period or between semesters). See the Graduate Catalog for additional regulations.

### **Application for Degree and Graduation**

A student who expects to complete all degree requirements by the end of a particular semester must submit a degree application form to the Supervisor of Graduate Records in the Graduate School. The deadline for submitting this application form is approximately one month after the beginning of a fall or spring semester; actual deadlines are posted on the Graduate School's web page. When a student completes a degree application form, he or she will be given information regarding deadlines for the submission of the thesis, doctoral essay, or dissertation

and for completion of the final oral examination. Also, information is provided to the student about the required format for the dissertation or thesis, fees for binding and microfilming, and fees and procedures for applying for copyright. The Graduate School requires two copies of the thesis, doctoral essay, or dissertation. The student is also required to complete a Survey of Earned Doctorates.

### **Hours A non-degree student can apply toward a degree**

A student can request to apply toward a degree up to nine hours of course work taken as a Non-Degree II student.

### **In-Progress (IP) GRADE**

A temporary mark of IP (In-Progress) can be assigned to a graduate student in a course, such as a graduate research-oriented course in which the nature of the course and the expectations of students cannot anticipate completion within one semester. IP marks must be changed to grades within one calendar year and will not be accounted for in the grade point average until that time. After one year, unless an extension is approved by the Graduate School, IP marks will be calculated as F grades. In contrast, an I (Incomplete) grade in a course converts to an F (if not satisfactorily converted to a passing grade) on the last day of the next regular semester (excluding summer terms).

### **Repeating Courses**

Grades for all courses taken by Graduate students will remain a permanent part of their transcript. Except for courses identified in the catalog as "may be repeated for credit," no course may be repeated more than once, and no more than two courses may be repeated and applied toward a degree. In instances of repeated courses, the second grade will be used to determine eligibility to graduate. Departments may impose higher standards.

The Graduate School does not have a "forgiveness policy." However, if a graduate student repeats a course for credit, only the second (or last) grade is used in determining eligibility to graduate.

### **Graduate Credit for Senior Undergraduate**

Undergraduates within 15 hours of undergraduate degree and having a 3.0 grade point average on all upper division courses may take 3 hours for graduate credit; undergraduate within 12 hours of undergraduate degree and having a 3.0 grade point average on all upper division courses may take 6 hours for graduate credit. An undergraduate may take a maximum of six semester hours for graduate credit.

### **Transfer Credit**

As explained in the Graduate Catalog, a maximum of six credit hours can be recommended for transfer credit from another institution for a student pursuing a master's degree (twelve hours for a student pursuing an MFA or Specialists degree). The Graduate School does not accept transfer credit toward the doctoral degree. However, University of Mississippi transcripts for doctoral students may include statements as to the number of credits completed at other institutions, by

name of institution and number of credits earned, but will not list the specific course numbers or titles

### **Time-to-Degree Policy**

All work applying to a master`s degree must be completed within a six-year period of time, including any transfer hours.

The total duration of study for the doctoral degree may not exceed seven years. It is expected that students will have been admitted to candidacy, that is, have passed all parts of their comprehensive examinations, within four years. Students who have not defended a dissertation prospectus within seven years will forfeit all credit earned toward the doctorate. However, students who do not complete all requirements for the degree within seven years may appeal to re-defend their prospectus in an oral examination. The prospectus committee may be the same or may be different than the previous committee. The prospectus topic may be the same or maybe be different than that presented earlier. If it is the same, the student must review work published in the last five years that impact the proposed dissertation. The faculty may question the student to assess competency to perform the proposed work. As a result of this questioning, the department may require the student to take another written comprehensive examination, take specific courses, or other remedies deemed appropriate by the faculty. Successful presentation and adoption of the prospectus, as determined by a unanimous vote of the committee, and the completion of any other requirements, will extend up to two years the student's eligibility to graduate.

### **Thesis and Dissertations**

Regulations governing the style, format, paper, abstract, and other matters may be found in a Manual of Theses and Dissertation available in the Graduate School office. The Graduate School also has software available to assist in preparing these documents. Additionally, the University writing center in the Main Library has staff who can advise graduate students about writing.

### **Academic & Research Ethics**

Ethical behavior is an integral part of any professional career. Graduate students at the University of Mississippi are governed by the academic code of ethics, which can be found in the University's M-Book.

<http://conflictresolution.olemiss.edu/m-book/>

In addition, all members of the department must observe the highest research integrity. There are many publications related to research integrity; however, probably the most standard guide is Sigma Xi's The Responsible Researcher: Paths and Pitfalls, which can be found at:

<https://www.sigmaksi.org/docs/default-source/Programs-Documents/Ethics-and-Research/responsible-researcher.pdf?sfvrsn=2>

The ethical behavior of students is not an issue that is taken lightly in this department and those found guilty of misbehavior will be summarily dismissed from the program.

### **Travel on Official Business**

It is the responsibility of each individual to make sure you sign a travel authorization form, prepared by the department staff assistant, before any business travel. Should you leave for a trip without the proper authorization signed, you will not be reimbursed from the Department or the University for any trip that is not approved in advanced. You will be responsible for all charges associated with any unauthorized trip.

If rental cars are used for departmental trips, only the travel to and from the destination can be reimbursed. Rental cars are not to be used for sightseeing and going out to dinner during conference trips. In order to be reimbursed for a rental car, you have to have prior approval by the Department Chair. If rental cars are required for travel, plan your travel back so that the car is turned in on time. If you get a ticket or the rental company is closed due to your personal activities coming back, you will be responsible for the ticket and the extra day charged to the rental vehicle.

Request for travel should be turned in at least 2 weeks prior to travel. For International travel request should be turned in at least 1 month prior to travel. These forms have to be approved and in the travel office in procurement before you depart for travel.

Once returned from trip, all original receipts must be turned in within 1 week. All receipts should be turned in together.

For travel to and from in one day, you will only be reimbursed for mileage or gas receipts, whichever your advisor chooses to pay.

### **Office Hours and Vacation**

Graduate education is significantly different from undergraduate education. In order to be successful, a student should be prepared to treat graduate studies as a full time, year round, job. At a minimum, students should be present in the department for at least 40 hours each week with a significant portion of that time being during the standard work day of 8:00-5:00. Each student should consult his or her research advisor or supervisor about specific expectations. Students should ordinarily plan to take no more than two weeks of vacation each year in addition to normal university holidays. University holidays are those 13 days throughout the year when university offices are closed. Vacations should always be scheduled with the approval of the student's graduate advisor, graduate coordinator and the Department Chair. Vacations will not be approved during the fall or spring semesters when classes are in session. Students who take unauthorized vacations, or more than two weeks of vacation per year may have their stipend either proportionately reduced or terminated.

### **Outside Employment**

Most students spend their graduate program in somewhat strained financial circumstances. Because being a graduate student is a full-time job itself, the

student is strongly encouraged to get approval from his or her major advisor and the Department Chair before engaging in regular employment outside the department. International students who have an assistantship requiring 20 hours a week are prohibited from accepting additional paid employment.

### **Internships in the Pharmaceutical Industry**

Pharmaceutical internships can play a valuable role in graduate education. A student interested in identifying a summer internship opportunity must obtain the approval of his or her major advisor and the department chair before accepting an offer for a summer internship. Students who are interested in seeking a summer internship are advised to meet with their research advisor early in the spring semester to request this approval.

### **Safety and Security**

Every graduate student will be assigned desk space and research work area. These areas should be kept clean and neat. The policies of the University of Mississippi as stated in the Chemical Safety Manual, Radiation Safety Manual and Biological Safety Manual will apply to all areas within the Department. These manuals can be found on the web site of the Department of Health and Safety.

Each graduate student will be issued keys to the departmental laboratories and an identification and access card to allow access to appropriate areas in Faser Hall and the Thad Cochran Research Center. It is the responsibility of each department member to assist in maintaining the security of the building and research laboratories. Therefore, if an exterior door is locked when you enter the building, ensure that it locks behind you. At the end of the day, ensure that the laboratory doors are locked and the lights turned off. Even during the day, there are often times when no one will be in the laboratory for extended periods of time. It is recommended that the laboratory doors be locked during such times. Personal valuables should not be left lying on the work bench or in the desk areas. It is the responsibility of all to make the Department a safe and secure place to work.

For home football games you must have the proper identification (green sticker) on your ID card in order to enter the building. Should you not have green sticker which is given out the SOP business office, you will not be able to enter the building.

### **Pharmaceutical Laboratories**

Between the hours of 6:00 P.M. and 7:00 A.M. on weekdays and all day on weekends and holidays, access to the Pharmaceutics Laboratories is limited to department faculty, staff and graduate students. During normal office hours, visitors to the department are permitted when accompanied by a department member.

### **Photocopy Machines**

The department has two photocopy machines; one for faculty and staff use and one for graduate use. Department graduate students are allowed direct access to

their copy machine for copying related to their department assistantship or thesis or dissertation research. If necessary, permission can be granted by a faculty member, to have the department staff assistant make copies using the faculty/staff machine. Permission will be granted only for department business.

The department copiers are not to be used to make final copies of a thesis or dissertation; these expenses are to be borne by the student.

### **FIRE EMERGENCY PROCEDURE**

PULL FIRE ALARM

CALL IN THE FOLLOWING ORDER:

UNIVERSITY POLICE – 4 + 911

HEALTH AND SAFETY – 5433

POWER PLANT – 7087

DR. REPKA – (662) 801-3284 (Dept. Chair)

DR. MAJUMDAR – (816)-820-2797

### **EMERGENCY PHONE LIST**

University Police Department 4 + 911

Oxford Fire Department 9 + 911

Emergency Medical Services 9 + 911

Hazardous or Toxic Materials **Day-** 5433 **Night-** 7234

Physical Plant Dispatch 7051