

**PHARMACEUTICS**  
**GUIDE TO GRADUATE STUDY**  
COLLEGE OF PHARMACY

The University of Texas at Austin  
(Revised September, 2009)

This "Pharmaceutics Guide to Graduate Study" of the College of Pharmacy is intended to act as an informative supplement and is not intended to supersede University policy on graduate studies.

**Certification page**

**Required by all Pharmaceutics students at the time of matriculation into the graduate program:**

**“I certify that I have read, understand, and agree to, the entire contents of this Graduate student handbook.”**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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## **I. INTRODUCTION**

Graduate education, research, and scholarly work leading to the Doctor of Philosophy degrees in the College of Pharmacy (COP) of The University of Texas at Austin are designed to assist the student to attain the highest level of professional and academic competence in the field of Pharmaceutics.

The information and regulations described in this manual are meant to guide the graduate student in proceeding through the program of study. Advanced degrees in the College are awarded on the basis of successful completion of courses and examinations, together with the writing and defense of a dissertation. The student is also judged by the graduate faculty on his/her ability to design and carry through work of the student's **own creation**, on the qualities of industry and invention, and on the personal character and attitude expected of a person holding an advanced degree from The University of Texas. The fitness of each graduate candidate is determined by the graduate faculty of the College of Pharmacy and the Dean of Graduate Studies of The University of Texas.

*Graduate study in the Division of Pharmaceutics is considered a full-time commitment on the part of the student. As such, students are expected to register for classes every semester, including summers.*

The graduate program in Pharmaceutics aims to provide students with both breadth and depth in the disciplines, and provide an experience in independent and fundamental research. A student receiving an advanced degree from the College of Pharmacy will be prepared for a career in research and scholarly work in an academic institution, industry, or government.

## **II. ORGANIZATION OF THE GRADUATE SCHOOL**

When a graduate applicant is admitted to The University of Texas at Austin, the person becomes enrolled in the Graduate School of The University. The Graduate School is the largest department on campus. It is a body of professors and scholars (members and associates) of the graduate faculty and those students enrolled for studies beyond the baccalaureate degree. The administrative head is the Dean of Graduate Studies who is ultimately responsible for all graduate course offerings as well as the programs of study of individual graduate students.

The supervision of graduate programs and related research projects within the College of Pharmacy is delegated by the Dean of Graduate Studies to the Graduate Studies Committee of the College of Pharmacy. This Committee consists of the graduate faculty within the College and is headed by a chair elected by the graduate faculty. An administrative sub-committee, made up of representatives from each graduate division, reviews policies and students' progression in the program.

### **A. ADVISING**

**The Graduate Advisor in the COP (Dr. Carlton Erickson)** has overall responsibility for graduate student recruitment and for the counseling and academic advising of graduate students in the pharmaceutical sciences. For the Division of Pharmaceutics, most of this is delegated to the **Pharmaceutics Academic Advisor; Dr. Jason T. McConville**. Dr. McConville also aids students with course selection and programmatic progress. **The Graduate Coordinator is Ms. Mickie Sheppard** who is the contact person for your application to graduate school in the COP. The Graduate Coordinator assists the Graduate and Division Academic Advisors with all administrative duties associated with graduate programs in the College. She is an excellent

resource for information about the protocols involved in obtaining the Ph.D. degree, in choosing courses, and for answering other programmatic questions. **The Pharmaceutics Division Head (Dr. Robert O. Williams III)** is available to describe the program to prospective students as well as to handle grievances. After a student chooses a Supervising Professor, that professor, the student and the Academic Advisor work together in making course selections and ensuring timely progress through the graduate program. Formal paperwork must still go through the office of the Graduate Advisor. The staff in the Office of the Dean of Graduate Studies (Main Building, Room 101) is also available to assist graduate students. The contact information for the faculty described above is provided here.

<b>Position</b>	<b>Contact</b>	<b>Room</b>	<b>Phone</b>	<b>Email</b>
Graduate Advisor	Dr. Carlton Erickson	PHR 5.210	471-5198	erickson.carl@mail.utexas.edu
Graduate Coordinator	Mickie Sheppard	PHR 2.222	471-6590	mickies@mail.utexas.edu
Pharmaceutics Division Head	Dr. Robert O. Williams III	PHR 4.214C	471-4681	williro@mail.utexas.edu
Pharmaceutics Academic Advisor	Dr. Jason T. McConville	PHR 4.214F	471-0942	jtmconville@mail.utexas.edu

### **III. ADMISSIONS, REGISTRATION, GENERAL REQUIREMENTS**

#### **A. ADMISSION**

The requirements for admission to the Pharmaceutics Ph.D. Program are:

1. Minimum of a bachelor's or master's degree or equivalent.
2. A grade point average of at least 3.00 in upper-division work (junior- and senior-level) and in any graduate work already completed.
3. A satisfactory score on the Graduate Record Examinations General Test (GRE). GRE scores more than five years old will not be accepted. GRE information is available on campus from the Measurement and Evaluation Center, the Office of Graduate Studies, and the Graduate and International Admissions Center. International students must also submit scores on the Test of English as a Foreign Language (TOEFL). Although there are no official cut-offs for GRE scores, a typical GRE score for previously admitted applicants has exceeded 1200 (verbal plus quantitative).
4. Adequate subject preparation for the proposed graduate major.
5. Submission of complete University and College of Pharmacy Application Forms
6. Three letters of recommendation from individuals who are well acquainted with the applicants' academic work and moral character.
7. A personal or telephone interview with the Pharmaceutics faculty if requested.
8. A recommendation for admission by the Pharmaceutics faculty.

Applicants are not guaranteed admission even though they meet these minimum requirements. All completed applications are reviewed by the entire Pharmaceutics faculty. The Vice President and Dean of Graduate Studies must approve all admissions.

Students will be admitted to the graduate program upon recommendation of the Pharmacy Graduate Studies Committee, provided that their previous academic training included appropriate work in fields related to the health sciences. Applicants without the appropriate background may need to complete additional course work during their career within the College or as a condition for admissions. Applicants who feel that their grade point averages or their scores are not valid indicators of ability should explain their concerns in a letter to the Academic Advisor.

**Admission with Conditions:** Almost all of the students who are admitted to the Graduate School have qualifications equal to or higher than the minimum standards outlined above. However, Pharmaceutics faculty may recommend, with the consent of the Graduate Dean, that a student who does not meet these minimum standards be admitted to the Graduate School with conditions. The Academic Advisor may require the student to maintain a certain grade point average or to take a certain number of semester hours of course work. A conditionally admitted student may also be required to remedy deficiencies in any academic preparation by taking undergraduate upper-division or graduate courses. The Academic Advisor notifies the student of these conditions at the time of their admission. A student who does not fulfill the conditions within the specified time may be barred from subsequent registration in the Graduate School. Typically, such students enter under probationary status and are not eligible to receive financial support.

During the admission process, the Graduate School imposes conditions on applicants who are to be admitted with conditions if the College does not do so. Conditions are noted in the applicant's admission record until they are cleared. At the end of the semester for which conditions are imposed, the student's file is reviewed by the Graduate Advisor together with the Graduate Coordinator to see if conditions have been met. If all conditions have been satisfied, the Graduate Coordinator writes a letter to the Graduate Dean stating that the conditions have been met and requesting release from "probation." Standard conditions are: "must enroll in at least 9 hours of coursework, must earn a "B" or better in each course, grades of X (incomplete) or Q (dropped course) are not permitted, continuance will be reviewed by the Chairman of the GSC or Graduate Advisor at the end of the semester." However, these conditions are at the discretion of, and may be modified by, the Graduate Advisor and the Pharmaceutics Academic Advisor.

**Readmission:** A former graduate student in good standing (with no outstanding fines or bars) is eligible to apply for additional graduate study. He or she must submit an Application for Readmission to the Graduate and International Admissions Center. Readmission must be approved by the Pharmaceutics faculty and the Academic Advisor. A student who has been admitted to candidacy for the doctoral degree must register every fall and spring semester as described in the section "Continuous Registration."

## **B. COURSE REGISTRATION**

**1. Registration for New Graduate Students:** Applicants are notified by email of their admission or denial to the Pharmaceutics program. Admitted applicants should notify the Graduate Coordinator for Pharmacy as soon as possible whether they plan to accept admission. The admitted applicant should work with the Graduate Coordinator and the Academic Advisor to learn the specific requirements of the Pharmaceutics programs and when to register.

University students register for each semester and summer session through the online registration system (ROSE). Complete information about ROSE and the registration process is given in the *Course Schedule*. Check with your faculty advisor, the divisional academic advisor, and the Graduate Coordinator before registering.

**2. Late Registration:** The period of late registration is given in the *Course Schedule*. During this period, a student may register with the consent of the college's Graduate Advisor and a late fee is imposed. After this period, consent of the Graduate Dean is required.

**3. Registration for Continuing Graduate Students:** Registration in the Graduate School beyond the first semester depends on satisfactory progress in fulfilling any admission conditions that were imposed, meeting any requirements made in writing, and maintaining a grade point average of at least 3.00 for all upper-division and graduate courses. For further information about grade requirements, see the section "Grades". Make an appointment with the Division's Academic Advisor (Dr. McConville) before registering for courses in order to obtain approval and update your progression worksheet. All electives must be approved in advance by the Academic Advisor.

## C. RESIDENCE

Each degree candidate must spend two semesters, or the equivalent, in residence at The University of Texas at Austin. A major portion of the graduate's degree program must be completed under the supervision of the Graduate Faculty of The University of Texas at Austin.

No student may receive advice and assistance from a member of the faculty in the preparation of the thesis or dissertation without being registered (if necessary, for multiple semesters) for the appropriate thesis or dissertation course. Registration for the Master's Thesis course and the doctoral Dissertation course must have covered a longer period than one long semester (or two five-week Summer sessions). Doctoral candidates **must register continuously** in the long sessions of the University from the time they enter candidacy until they receive their degrees. Note that the Pharmaceutics Division only accepts applicants into the Ph.D. program and therefore registration for Master's work is only for students who have been requested to transfer into this program during the course of their studies.

## D. SAFETY, COMPLIANCE, IRB AND IACUC REQUIREMENTS

**1. Safety: Students must complete and document all laboratory and university safety requirements in a timely manner. Overall the student must take personal responsibility for all lab safety and training. In addition, the student is responsible for reporting any observed safety violations.**

The website for online classes is:

<http://www.utexas.edu/safety/ehs/train/index.html>

i. Immediately upon matriculation into the Pharmaceutics Ph.D. program, you must plan for safety training. Click on the link for "register" to enroll. It takes 3-5 days to be eligible to take

the courses so you need to get the paperwork filed as early as possible so you can start the mandatory safety training.

ii. Required online Courses:

- a) OH101, Hazard communication (online)
- b) OH201, Lab safety training (online)

iii. In-lab training is required at the discretion of the Supervising Professor.

iv. Required in-person courses: OH205 - fire extinguisher use (1 hour). Register at:  
<https://utdirect.utexas.edu/tclass/index.WBX?component=0>

v. Other training may be mandated by the Supervising Professor. If you work with radioactivity, you must take OH301 - basic radiation safety.

vi. Biosafety information: <http://www.utexas.edu/research/rsc/ibc/index.html>

**2. Compliance: Students must complete any and all compliance training (training, safety, ethics, etc.) required by the university and the college. As part of this process, students are required to read this entire handbook and certify that they have read, and understand, all of the contents. Students must sign the certification on page ii of this handbook, and turn it into the Academic Advisor at the time of matriculation.**

**3. IRB and IACUC: If students are to work with humans or animals they must complete all appropriate training and be included on the proper protocols before they begin the project.**

i. Animal use and IACUC information (see also Appendix 4):  
<http://www.utexas.edu/research/arc/misc/training.htm>

ii. Human protocols and IRB information (see also Appendix 5):  
<http://www.utexas.edu/research/rsc/humanresearch/index.html>

## ***IV. THE DOCTOR OF PHILOSOPHY DEGREE***

### **A. OVERVIEW**

Successful progression through the Pharmaceutics Ph.D. program involves satisfactory completion of curricular requirements, oral and written communication requirements, laboratory work, preproposal, qualifying exam, the writing of a dissertation, and its defense. These are each described in detail below, and in all cases, are dependent upon approval from the appropriate advisors. In brief:

a) Curricular requirements include satisfactory completion (minimum grade of B) of all courses undertaken (i.e. all pharmaceutics course rotations as well as one course from each of the four non-Pharmaceutics core areas).

b) Students must participate in the Division seminar series every long semester, which includes presentation of seminars as deemed necessary by their Supervising Professor and Academic Advisor.

c) Laboratory work requirements include selection of a Supervising Professor, satisfactory progress in the lab at the discretion of the Supervising Professor, completion of a research proposal and its defense in the Qualifying Exam, entrance into candidacy, and completion of the written dissertation and oral defense.

## **B. STUDENT RESPONSIBILITY**

The student is held responsible for knowing deadlines, degree requirements and enrolling for courses that fit into the degree program. The student is likewise held responsible for knowing the University regulations with regard to the standard of work required for continuance in the Graduate School. If the student needs additional information, the Student Office of the Graduate School or the Graduate Advisor should be consulted. All students are encouraged to check with the appropriate degree clerk in the Student Office of the Graduate School early in their graduate careers.

## **C. REGISTRATION AND SATISFACTORY PROGRESSIONS**

Prior to each semester (fall, spring, summer), students must have their course work approved by the appropriate advisor. Prior to choosing a Supervising Professor, the Academic Advisor performs this function. When the Supervising Professor is chosen, he/she works with the student to choose the coursework, with final approval from the Academic Advisor.

Registration and continuation in the Graduate School beyond the first semester is dependent on the following: 1) satisfactory progress in absolving any admission conditions that may have been imposed, 2) maintenance of a 'B' grade point average for all upper-division and graduate courses taken in a given semester, 3) satisfactory completion of all other coursework (e.g., credit/no credit), and 4) satisfactory progress in research as documented above.

Should a graduate student make less than a 'B' average in a given semester or summer session, the student will be warned by the Office of the Graduate Dean that continuance as a graduate student is in jeopardy (warning status). During the next semester or summer session in which the student is registered, a 'B' average must be maintained or the student will be subject to dismissal at the end of it. During this time of warning status, the Graduate Dean will not permit dropping or withdrawal from courses. If a student is in warning status, the Division must petition for him/her to be continued in the Graduate School. During the next semester, the student must bring up the GPA to at least 3.00.

Any grades of "C" even in non-mandatory courses may require remediation or subject the student to dismissal. This event, along with any unsatisfactory outcome of points 1 through 4 above, must be addressed prior to continuation in the next semester, through notification of the Supervising Professor, the Academic Advisor, and the Graduate Student Coordinator. Grades of D, F, incompletes and no credit may result in dismissal, academic probation, or other remediation. The Academic Advisor must be consulted in these instances.

The graduate student who has been dismissed may be readmitted for further graduate study only by petition by the Graduate Studies Committee of the College. The petition will be approved or disapproved by the Dean of Graduate Studies.

Satisfactory completion of coursework and other Division requirements is expected to occur prior to scheduling of the Qualifying Exam. At the discretion of the Supervising Professor together with the Academic Advisor, a student may take the Qualifying Exam prior to completion of one required course. However, this must be approved in advance.

## D. CURRICULUM

**1. Pharmaceutics Ph.D. Candidacy Requirements for Graduate Students:** Listed below are the requirements that must be satisfied before a student may apply for doctoral candidacy. Satisfactory completion of at least one course in each of the four non-Pharmaceutics core areas is required. NOTE: If a course being used to satisfy a core requirement is not one of the example courses listed for the requirement, then the Pharmaceutics Division Head must show approval of the substitution. Additionally it should be noted that courses are not offered every semester and are subject to change.

### **Curricular requirements:**

#### **Courses Offered by the College of Pharmacy:**

PHR 180J	Advanced Pharmaceutics Lab Problems
PHR190H	Advanced Pharmaceutics Research Conference
PHR 280J	Advanced Pharmaceutics Lab Problems
PHR 380J	Advanced Pharmaceutics Lab Problems
PHR380M	Drug Development
PHR380Q	Advanced Pharmaceutical Processing
PHR381D	Product Development
PHR381G	Advanced Manufacturing Pharmacy
PHR382R	Recent Advances in Pharmaceutics
PHR382V	Pharmaceutical Biotechnology
PHR383N	Solution Theory and Disperse Systems
PHR383P	Advanced Pharmacokinetics
PHR383Q	Statistics in Translational Science
PHR383R	Rate Process in Pharmaceutical Systems
PHR386Q	Preclinical and Clinical Drug Development
PHR487Q	Communication Skills for Scientists

#### **Courses Offered Outside the College of Pharmacy:**

##### Upper division courses in Statistics

EDP371	Introduction to Statistics
EDP380E 1	Fundamentals of Statistics
M378K	Introduction to Mathematical Statistics
M384F	Design of Experiments

##### UT-Austin Mathematics courses at or above Calculus II

M427K	Advanced Calculus I
M427L	Advanced Calculus for Applications II
M368K	Numerical Mathematics

##### Physical Chemistry courses at or above CH353 level

CH353M	Physical Chemistry I for Life Sciences
CH354	Quantum Chemistry and Spectroscopy
CH392N	Physical Chemistry of Macromolecular Systems

## Graduate-level courses in Chemistry or Chemical Engineering and Biomedical Engineering

BME382J 6	Biopolymers and Drug/Gene Delivery
BME 382J	Advanced Engineering Biomaterials
BME387J	Topics in Biomedical Engineering
CHE384K	Applied Kinetics and Chemical Reaction Analysis
CHE392	Polymer Science
CHE395J	Product and Process Development
CH381M	Advanced Analytical Chemistry
CH386J	Advanced Organic Chemistry

**2. Division Seminar:** All students are required to present seminars at the discretion of the Supervising Professor during the Division seminar series (196S) (generally once per year). However, all students are required to attend every seminar whether they are presenting or are assigned as a discussant. In some semesters, the student may not have to sign up for the seminar course, and therefore will not receive credit for that semester, but attendance is still required. Over the course of the program it is expected that students will receive at least 4 credits for Division seminar (Note: Doctoral candidates do not have to enroll in the division seminar but are expected to attend).

**3. Course Waivers:** Students who have been accepted into the Ph.D. program with previous graduate level course credit or relevant experience may have some of the required courses waived based upon agreement with the Supervising Professor and the Pharmaceutics Academic Advisor. Both must agree upon this waiver for it to be approved; the default is that the student must take the required course. When appropriate, a professor teaching a comparable course may be consulted for guidance or comparison of syllabus.

**4. Grades:** Course credit is given per Graduate School guidelines. Every semester hour of C, however, must be balanced by one of A, because the degree candidate is required to present an overall average of B at the end of the program of study. However, any grade below B may result in probationary or disciplinary activity at the discretion of college advisors. In addition, students in the Division of Pharmaceutics must receive a B or better in every required course. Only upper-division and graduate level courses taken while in graduate status at the University of Texas at Austin, or courses reserved-for-graduate-credit taken at UT Austin in the last semester prior to graduation, except Thesis and Dissertation courses (PHR 698AB and 699), are counted in the average. Equivalent courses must be used to offset a 'C' (e.g. a didactic course for a didactic course, etc.). Grades of D, F, no credit or incomplete are discussed above (page 6).

The first thesis (PHR 698A) and dissertation (PHR x99R) course earns a grade of CR/NCR. The second thesis (PHR 698B) and dissertation (PHR x99W) earn a grade of \* until the final thesis or dissertation has been submitted to the Graduate School. The CR/NCR grades are not computed in the grade point average. No more than twenty percent of the credit hours submitted for any M.S. or Ph.D. degree may be taken on a Credit/No Credit basis.

The symbol 'X' may be reported in cases where the student has not completed all the work assigned in a course before its conclusion. Upon completion of the required work, the 'X' may be converted into a letter grade by the instructor, with the approval of the Graduate Dean's Office, if such conversion is made within one long semester after the filing of the 'X'. If no such change is made within this time, the symbol 'X' will be converted to an 'I' and it will remain on the student's record as a permanent incomplete. A possible consequence of this is that the student will not be eligible to receive financial support (TA or RA) with more than 2 incompletes. The incompletes can include 'X's, 'I's or any combination.

**5. Course Load:** The maximum course load for a graduate student is fifteen semester hours (fall/spring) or twelve semester hours (summer). Registration in excess of these maxima must have the recommendation of the Graduate Advisor and approval of the Graduate Dean, and will be permitted only under exceptional circumstances. The University and the Division currently recognize nine hours as a minimum full-time load during the long semester and three hours during the summer session. A full-time program involves taking the full-time course load, of which a portion may consist of courses relating to the student's teaching or research duties.

**6. Adding and Dropping Courses:** Specific dates and information are available in the Graduate Coordinator's Office. The UT catalog states: "With the required approvals, a graduate student may drop a course through the last class day of the semester or summer term; after the twelfth class day of the semester or the fourth class day of the summer term, the graduate dean's approval is also required. If the student drops the course by the twelfth class day of the semester or the fourth class day of the summer term, the course is deleted from the student's academic record and applicable fees are refunded.

If the student drops the course from the thirteenth through the twentieth class day of the long semester or from the fifth through the tenth class day for the summer term, the symbol Q appears on his or her academic record. No refund is given. After these dates, the course instructor assigns the symbol Q or a grade of F. If the student is registered on the credit/no credit basis, the symbol of NC is recorded."

Students with TA/GRA funding appointments must maintain full-time enrollment.

In general, the following policies apply in the UT Graduate School:

- a) Whether a course is to be taken on the Credit/No Credit basis should be decided at the time of registration. Any request for changes after the 4th class day requires a special petition from the Graduate Advisor to the Graduate Dean.
- b) Adds/Drops can be initiated in the Graduate Advisor's Office.
- c) Dropping a graduate course beyond the standard date for undergraduates will only be approved for substantial, non-academic reasons. Dropping a course at the end of the semester to prevent receiving a low grade will not be allowed. Assigning an X for the same reason will also not be allowed.

**7. Transfer of Credit:** Ordinarily, all work for the Ph.D. degree must be done at the University of Texas at Austin. Under rare circumstances, a maximum of six semester hours of graduate course work, in which the grade is 'A' or 'B', may be transferred from another institution, but only on the basis of petition by the College's Graduate Studies Committee and approval by the Graduate Dean. If transfer of credit is requested, an official transcript of these courses must accompany the petition to the Graduate School. In cases where such transfer is approved, the student must still meet the residence requirement of two full semesters or the equivalent. Rather than granting transfer of credit, more commonly, students may be waived from Division course requirements if prior graduate work at another institution is deemed appropriate (see above). This decision is reached by consultation with the Division Head, Supervising Professor and Academic Advisor.

**8. Documentation:** A checklist of progressions in coursework, lab work, and other milestones must be updated when appropriate and provided to the Pharmaceutics Academic Advisor at least once yearly; see **Appendix 1**.

## **E. RESEARCH AND PROGRESSIONS**

**1. Choosing a Supervising Professor:** Incoming graduate students may enter directly into a specific laboratory, or may do rotations (arranged prior to admissions)..

In consultation with the Supervising Professor, Graduate Advisor, Pharmaceutics Academic Advisor, and Division Head, students are permitted to change Supervising Professors during the

course of their program, should this enhance their progress toward a degree. Thus, the initial choice, while important, may be changed at any time before the student enters candidacy. Changes after candidacy are possible, but are likely to substantially slow a student's progress towards a degree.

**2. Documentation:** Documentation of all committee meetings must be provided by the Supervising Professor to both the Pharmaceutics Academic Advisor and the Division Head, and a copy of the memo will be kept with the student file held by the Academic Advisor. In addition, an update must be made to the checklist in **Appendix 1**.

## **F. THE QUALIFYING (CANDIDACY) EXAMINATION AND COMMITTEE**

**1. Procedure:** At the beginning of the semester in which qualification examinations will be undertaken, the student should notify the Graduate Coordinator (Ms. Sheppard) that candidacy is approaching. *The written proposal must be submitted to the committee a minimum of two weeks prior to the scheduled exam. Otherwise the exam will be rescheduled.*

**2. Qualifying Exam Committee:** An examining committee will be formed, consisting of the student's Supervising Professor and at least four other faculty members, one of whom must be from outside the Division (selected by student in consultation with his/her Supervisor, the Pharmaceutics Advisor, and with approval of the Division Head). At least three members of the committee must be College of Pharmacy faculty, and at least two members must be Pharmaceutics faculty. At the time of committee formation, a memo must be submitted to the Pharmaceutics Advisor and the Division Head. The Supervising Professor serves as the committee chair.

**3. Qualifying Exam Procedures:** There are two parts to the exam. The first part of the exam set by each member of the Exam Committee that are selected from within the College of Pharmacy. Each of these examinations is designed to test the general background, and take the form of a written assignment.

The second part of the exam is the proposal defense. The examining committee will evaluate the proposal for creative thought, understanding of the chosen scientific problem, clarity and organization of presentation, and thoroughness and accuracy of experimental design. Although no specific amount of time is required for this section of the exam, it is typically one- to two-hours in length.

**4. Outcomes:** A student may be allowed to repeat the proposal defense, the general knowledge section, or both, at the discretion of a majority of committee members. However, a student is only allowed one re-examination. The decision for transfer to a terminal master's program may also be made at this time or at a subsequent meeting. If the qualifying examination is not passed, the examining committee may:

1. Recommend that the student be terminated from the graduate program.
2. Recommend that the student be allowed to retake the examination(s).
3. Require that other action be taken (e.g., prior to retaking the examination, the student may be required to take further coursework for better preparation).

**5. Entrance to candidacy, documentation, and notification:** After the qualification examination, specific paperwork and attendance at an Administration Subcommittee (ASC) meeting (held in May, August, and December) for review of candidacy will be required before the student can officially advance to doctoral candidacy. The student should also complete the Intellectual Property (Copyright) Tutorial certification and Statement of Research with Human Participants. See specific information about those on the Office of Graduate Studies (OGS) website at <http://www.utexas.edu/ogs/pdn/>. The candidacy application is electronic. The Graduate School receives a copy of the short CV and a letter from any member of the

dissertation committee who is not on the faculty at UT-Austin. The Graduate Coordinator will help the student with properly fulfilling these requirements.

The satisfactory completion of these requirements, along with a “B” or better in all required didactic courses, will allow the student to apply to enter Ph.D. candidacy. A student may progress to candidacy with one outstanding course only with advance approval of the Academic Advisor. Candidacy is formally approved by the Graduate School following application to the Administrative Subcommittee of the Graduate Studies Committee. The Graduate Coordinator will assist the student with the formal application procedures to enter candidacy. Additionally, an update to the checklist in **Appendix 1** must be made at the time of entrance to candidacy.

**6. Dissertation Supervisory Committee:** The application for candidacy includes specification of the members of the Dissertation Supervisory Committee. The student consults with the Supervising Professor and the Academic Advisor concerning the composition of this committee, and the College Graduate Advisor nominates these members to the Graduate Dean. The committee ordinarily consists of five members (minimum) drawn chiefly from the candidate's major area, and chaired by the student's Supervising Professor. At least one member of the committee must be from outside the College of Pharmacy. The committee requires three Pharmaceutics faculty members, and at least half the members must be in the College of Pharmacy. Based upon the Graduate Advisor's nomination, the Graduate Dean appoints the committee, which then serves to guide the student in the pursuit of the research problem and in the writing of the dissertation itself. While there is every expectation that the original NIH proposal evaluated in the qualifying exam will serve as the blueprint for the student's dissertation research, it is recognized that new findings may require substantial changes. These should be done in consultation with the student's Dissertation Supervisory Committee.

**7. Dissertation Defense:** Approximately thirty days before the Defense, the members of the dissertation supervisory committee are provided with unbound copies of the dissertation. When, in the opinion of the committee, the student has completed the dissertation, the final oral examination is scheduled. This is accomplished by submitting the form *Request for Final Oral Examination*, which must be printed on pink paper, to the Graduate School a minimum of two weeks prior to the date of the examination. The form must be accompanied by one copy of each of the dissertation abstract, the *vita*, title page, and Committee Certification of Approved Version (unsigned) for a format check. The abstract must be approved by the supervisory committee before it is sent to the Office of Graduate Studies. The abstract will be published in *Dissertation Abstracts, International*. The committee's decision to examine a dissertation must be unanimous.

**8. Timetable for Progression to Ph.D. candidacy and 99-hour rule:** The guidelines stated above are intended to keep the students on track to receive their Ph.D. degree within 5 years after entering the program. The faculty understands that there may be delays for individual students at various steps along the progression to candidacy. However, all students are ultimately responsible for insuring that they are making appropriate progress in their degree program. Students who have not successfully entered Ph.D. candidacy by the end of their 3rd year in graduate school may not be allowed to proceed into candidacy, but may be transferred a terminal master's degree program if that is deemed appropriate by the student's academic advisors.

No official time limit has been imposed on acquiring the doctoral degree; however, all completed course work that is included in a student's degree program at the time of admission into candidacy must have been taken within the previous six years (exclusive of a maximum of three years of military service). All doctoral work is subject to review by the Graduate Studies Committee of the College, if the student has not completed the degree within three years from the date of admission to candidacy. In addition, all work is subject to review by the Graduate Dean. Students should be aware that the Texas Legislature has required charging out-of-state tuition for all graduate students who have accumulated more than 99 hours of doctoral level credit. For more information on the official Graduate School policy on the 99 hour rule see the web site maintained by the Office of Graduate Studies (<http://www.utexas.edu/ogs/publications/index.html>).

**9. Graduate Forms and Instructions, Ph.D. Degree:** Specific due dates, forms and guidelines are available on the OGS website (<http://www.utexas.edu/ogs/>). In general, it is required that the graduate student:

1. File the Degree Candidate Form in the Office of Graduate Studies by the required deadline. This must be done at the beginning of each semester the student anticipates possible graduation.
2. Submit the dissertation and dissertation abstract to the Supervising Professor at least sixty days before the final oral.
3. Submit Request for Final Oral Examination to the Graduate School after committee members have read and approved the dissertation. The request for the final oral should be made two weeks prior to the date of the exam. In addition, the student must submit ten copies of the approved dissertation abstract with the request for final oral. The abstract will be published in Dissertation Abstracts, International (it is hoped that this will be neither the student's first nor last publication). One copy of the Vita must accompany this material. See specific instructions on the OGS website. Be sure to reserve a room for your dissertation defense.
4. The following items are submitted to the Office of Graduate studies after the final oral.
  - a. One electronic copy of the dissertation (PDF electronic format) that includes the Committee Certification Approved Version and that conforms to the dissertation guidelines of OGS. (Optional): one word processed unbound, 25% cotton copy in a box.
  - b. Committee Certification of Approved Version (dissertation signature page)
  - c. Dissertation Data Sheet
  - d. Publication by UMI
  - e. Copyright disclaimer
  - f. Survey of Earned Doctorates
  - g. Abstracts and vita
  - h. Publication and processing fees
  - i. Dissertation Publishing Agreement
5. The Report of Final Oral (gold sheet) must be signed by the Chairman of the Graduate Studies Committee, currently Dr. Marvin Shepherd, and is submitted to the Graduate School by the Supervising Professor.

**10. Publication of Dissertation:** The candidate is responsible for expenses connected with preparing the dissertation, although the supervisory professor may provide assistance in the form of supplies.

**11. Commencement Exercises and Diploma:** The doctorate is awarded at the Commencement exercises following the successful completion (on time) of all requirements of the degree. The diploma is sent within three to six months after graduation. Degrees are awarded at the end of the Fall and Spring semesters and the Summer session. Formal Commencement exercises are held only at the end of the Spring semester.

## **G. SEMINAR PRESENTATION REQUIREMENTS**

**1. Importance:** Division seminars are designed to provide a chance for students to learn how to prepare and to present orally information on a chosen topic of Pharmaceutics. A secondary

purpose is to disseminate pharmacological information on topics that may be peripheral to many students' research interests, and to discuss such ideas and concepts in a scientific atmosphere.

Seminars provide an opportunity for faculty to assist students in his or her seminar style, for faculty to judge a student's ability to think on his/her own, and for students to gain speaking confidence in a friendly environment.

**2. Requirements of PHR 196S:** During each Fall and Spring semester, all students are required to attend the weekly division seminars (PHR 196S). However, for purposes of course credit, students are required to enroll only during those semesters in which the student will be giving a presentation. A summary of the specific requirements of this series is provided in **Appendix 2**.

## **V. THE PHARM.D. – PH.D. PROGRAM**

[http://www.utexas.edu/pharmacy/research/pharmd\\_phd/description.html](http://www.utexas.edu/pharmacy/research/pharmd_phd/description.html)

### **A. INTRODUCTION**

The College of Pharmacy offers a sequential PharmD/PhD degree track program to qualified pharmacy students. This program combines the features of a professional PharmD degree with the advanced training and research of a pharmaceutical sciences PhD degree. Students who complete the PharmD/PhD degree track will be uniquely qualified to translate basic pharmaceutical sciences research into clinical applications. Graduates of the PharmD/PhD program will be well qualified to pursue careers in teaching and/or research in academia, industry, or in a variety of other settings. The areas of emphasis of the program are: Medicinal Chemistry, Pharmaceutics, and Pharmacology-Toxicology.

### **B. GOALS AND PHILOSOPHY**

The PharmD/PhD program at The University of Texas at Austin is designed for highly motivated and qualified individuals who are seeking a combination program in the clinical and basic sciences that will prepare them for a career in academics, research, or other areas in which the ability to translate basic science research into clinical applications is sought. By carefully structuring a dual degree program, it is possible for students to complete the requirements for both the PharmD and PhD degrees in a shorter time than would be the case if the two degrees were obtained separately. The PharmD/PhD program is available to students who have already been admitted to and are enrolled in the PharmD program, but only a few select PharmD students will be able to meet the rigors and demands of this program.

The PharmD/PhD program is not a new curriculum per se; but rather a restructured program flexible enough to serve a dual purpose. Students in the program will engage in research and training activities while completing the PharmD degree. This early exposure to research will enable them to subsequently complete their PhD degree requirements in a shorter period of time when compared to completing each degree separately. The program is integrated with the Colleges Honors Program.

### **C. DURATION OF THE PHARM.D. – PH.D. PROGRAM**

Unlike the PharmD component, which has a fixed curriculum, the PhD is a research degree, and so it is impossible to put a firm timetable on the duration of the program. Traditional PhD students typically require five years to complete their degree. However, the efficiencies built into

the PharmD/PhD program should shorten the time required to complete the PhD degree. We estimate that students will be able to complete their PhD degree within three years after the PharmD degree.

## **D. OUTLINE OF THE PHARM.D. – PH.D. PROGRAM**

Enrollment in the program is restricted to currently enrolled PharmD students. The enrollment process consists of two phases. Phase I is the recruitment and discernment phase that occurs between the Spring semesters of the first and second professional years. Students who have demonstrated exceptional performance at the end of the Fall semester of the first professional year will be invited to join Phase I of the PharmD/PhD program. During this phase, students will enroll in a research seminar course (PHR 051R) and complete a minimum of three exploratory research rotations. In addition, students in Phase I will be encouraged to take course work required for admission to the PhD degree. At the end of the P2 Spring semester, students will formally apply to the PharmD/PhD program. Application materials consist of current GRE scores (verbal, math, and quantitative but not subject area), transcripts, a statement of purpose, and letters of recommendation. Phase II begins when a student is accepted to the PharmD/PhD program. Phase II students will be guaranteed admission to the Graduate School through the University's Graduate Select Admission Program. During phase II, students will continue the PharmD curriculum while also carrying out research and taking additional course work geared towards the PhD degree. During the Fourth professional year, Phase II students will continue their research during three research rotations. Upon graduation with the PharmD degree, these students will be officially enrolled as PhD students. It is expected that these students will take their PhD candidacy exams within 9-12 months of completing their PharmD degree. After entering candidacy, students will complete their PhD research and defend their dissertation to obtain a PhD degree.

## **E. CURRICULUM FOR PHARMACEUTICS STUDENTS IN THE PHARM.D. – PH.D. PROGRAM**

Because there is considerable overlap in coursework, several courses may be waived at the discretion of the Academic Advisor and the Supervising Professor. If there is disagreement, the default is for the student to take all required courses of Ph.D. students. The expectation is for students to meet the requirements in Methods, Communication Skills for Scientists, Statistics, Ethics, and any appropriate didactic courses (typically between 1-3 courses depending upon background preparation). All other requirements of Pharmaceutics Ph.D. students must be met by Pharm.D. – Ph.D. students.

## **VI. MASTER OF SCIENCE DEGREE**

### **A. OVERVIEW AND PROCEDURE**

The Division of Pharmaceutics does not admit students to a master's degree-granting program. However, students in the Ph.D. program may be transferred to a terminal master's program under some circumstances, as described above. **1. Application for Candidacy:** Students must apply for master's candidacy in the same semester in which they propose to complete the M.S.Pharm. degree, and be enrolled in PHR 698B (the second thesis course). An electronic program of work

must be submitted by the Graduate Coordinator before the Degree Candidate Card (See 3 below) will be accepted by the Graduate School.

**2. Coursework Requirements:** To be eligible for the M.S.Pharm. defense the following are required: 1) a minor of at least six hours of upper division/graduate coursework taken in the same nonpharmacy department, 2) a grade average of "B" is required in both the major and the minor (seminar and research sections do not count in the program of work), 3) a minimum of 30 hours of didactic coursework, including PHR 698A/PHR 698B (Thesis) is required for the M.S. degree.

**3. Degree Candidate Card:** At the beginning of the semester of intended graduation and by the deadline established by the Graduate School, the candidate files an electronic Degree Candidate Card to the Graduate School office. If the electronic deadline is missed, the student must take a paper form to the Graduate school. The student needs to contact the Graduate Coordinator as some deadlines may be inflexible. In addition, the Degree Candidate Card does not carry over and must be refiled if graduation is postponed.

**4. Thesis Preparation:** The thesis should be submitted to the supervising committee thirty days before the first day of the final examinations. The guidelines to be followed for thesis preparation are available from the Graduate School Office. The thesis must be submitted to the student's committee at least two weeks prior to the examination.

**5. Oral Examination: Master of Science in Pharmacy:** When the student has satisfied the requirements outlined above, the supervising professor will set a time and date for the M.S.Pharm. oral examination. The examination committee consists of the members of the qualifying exam committee. If the student does not pass the oral examination, a second opportunity will be given after an appropriate period to allow for further preparation. If the student does not pass the examination after repeating it, the student will be dropped from the graduate program. Upon successful completion of the examination, the supervising professor notifies the Graduate Advisor and the Dean of Graduate Studies that the student has satisfied departmental requirements for awarding the Master of Science degree. The Dean of the College of Pharmacy is also informed by the supervising professor of the satisfactory completion of all requirements by the candidate. The student will submit the Master's Data Sheet and two bound copies of the thesis to the graduate office.

**6. Diploma:** The Registrar mails the Master of Science diploma to the successful candidate three to six months after graduation.

## **B. GRADUATE SCHOOL FORMS AND INSTRUCTIONS, M.S. DEGREE**

A Master of Science packet, including forms and deadline dates, should be obtained from the Graduate School at the beginning of the semester in which the student plans to receive the M.S. degree. All materials are found on the Graduate School website: <http://www.utexas.edu/ogs/pdn/>

It is required that the student:

1. File in the Graduate office before the indicated deadline of the final semester (the semester in which the student plans to graduate):
  - a. Degree Candidate Card
  - b. Application for candidacy
  - c. Program of work (currently under review; consult with the Graduate Coordinator for updates on this process)

2. Submit Master's Data Sheets at the time of presenting the thesis to the Graduate Office.
3. Submit to Graduate Student Office for approval one of two potential formats of the thesis: either two bound copies of the thesis (on cotton paper) or an electronic version, in the form of a pdf file on CD or zip disk. In either cases, printed copies of the following must be provided and submitted separately from the thesis: a title page, a signature page (with original signatures of the supervising committee as listed on the Master's Graduation Application Form), and an abstract. Other items that are turned in with the thesis include: the Copyright disclaimer; Master's Data Sheet; Master's Degree Certification; and Photocopy Permission. Check the specific deadline date for these requirements, as the date is INFLEXIBLE and must be met on time.

Theses must follow the guidelines of the graduate school format booklet, Format for the Master's Thesis and Report. A format check for the electronic or print versions is recommended before turning in the completed work.

## **VII. GENERAL INFORMATION:**

### **A. ACCESS TO BUILDING AND LABORATORIES:**

Upon arrival the student will be issued an access card to the building and a key to the research laboratory when a supervising professor is chosen. If assisting in a course, the student may also receive a key to the teaching laboratory and preparations room. In order to decrease the chances of theft, doors should be closed and locked at all times other than when they are occupied.

The building hours are as follows:

Monday – Friday	7 am - 10 pm
Saturday	8 am - 6 pm
Sunday	Closed

When the buildings are closed you must have an access card in order to get into the buildings. After building hours you must **enter** and **exit** through the appropriate doors of the Old Pharmacy Building using your access card in the card reader on the exterior of the building to enter and the button on the interior of the building to exit. **Under no circumstances (except fire or other emergency) are you to exit any other door after hours.** When you exit an improper door, the silent alarm is activated at the UT Police Department.

You should not let anyone into the building, or bring friends in with you. Unauthorized people who are in the building after building hours should be reported immediately to the UT Police at 471-4441. Do not prop any doors open, because this causes the alarm to activate and makes the building vulnerable to theft.

You must comply with these rules. The Dean feels that liberal access to the Pharmacy Buildings is a privilege, and if people cannot follow the guidelines for building security, they will have this privilege removed. Access cards will be confiscated.

### **B. LIBRARY**

The student should adhere strictly to the library regulations on campus. Books and reference materials should be returned promptly by their due dates. Books and bound journals must not be

used on a laboratory bench where they may become damaged by solvents. Materials must always be checked out before they are removed from the library.

Libraries of interest to the pharmacy graduate student are Science, Chemistry, Engineering, Physics, Math, Geology, Law, Public Affairs, and the Perry-Casteñeda Library (Main Library). Most items of interest are now available free of charge electronically.

## C. OFFICE SUPPLIES

Office supplies are limited to use for Division or training-related activities only. Graduate students are expected to supply their own materials for production of their dissertation. Therefore, copying of drafts of the dissertation is not allowed on Division copy machines. However, the student's supervising professor may choose to help the student defray some of the costs of printing, copying, and binding of the dissertation.

## D. RESEARCH LABORATORIES AND RELATED FACILITIES

The pharmacy graduate student has access to the laboratory where the research work is to be done. With the approval of the supervising professor (and approval of other laboratory supervisors as applicable), the student may be able to use equipment in other research and teaching laboratories. It is necessary to check with the faculty member in charge and read the instruction booklet before working with most instruments in the College. Check with your supervising professor in advance of using any apparatus, if at all in doubt.

*Remember that being allowed to work in a lab other than your own is a special privilege which can be revoked if you leave the lab in disarray or damage the equipment.*

## E. SAFETY

Safety is of paramount concern in laboratories. The student should constantly guard against injuries from cuts, fires and explosions, and hazardous chemicals. Safety glasses should be worn as necessary in the laboratory. Smoking is not permitted in any University of Texas building. A sign should be posted when dangerous materials or explosive gases are being employed in a laboratory. Students should review the safety information available on the UT web site <http://www.utexas.edu/safety/ehs/>

All new students are required to attend several safety orientation courses which are offered by the UT Office of Environmental Health and Safety. These courses include the following:

- Hazard Communication (General) - 1 hour
- Laboratory Safety - 1.5 hours
- Fire Extinguisher Use - 1 hour
- Hazard Communication (Site-Specific) - to be given by lab supervisor

The Safety Officer of the College will routinely monitor your laboratory to assure that safety regulations are being met. Proper steps will be taken if safety is not maintained in any part of the pharmacy building.

Students working with radioactive materials should obtain a copy of the manual *RADIATION* from the University Safety Office and are required to attend a class offered by them to become familiar with the regulations regarding the use of radioactive materials at The University of Texas at Austin. No eating or drinking is allowed in laboratories that have been cleared for use of

radioactivity or biohazardous materials. Proper professional conduct is required in the laboratory at all times.

If a graduate student is injured while working in the research laboratory, the student should report to the Student Health Center for treatment. A written report should be made within 24 hours to both the supervising professor and the Dean's Office. This report should detail the time, date, place, and circumstances of the accident.

Lights, water, steam and gas should be turned off when leaving the laboratory, unless special arrangements are made to have them remain on. Be particularly careful that water does not overflow and cause damage in the building.

Laboratory coats can be obtained through your supervising professor and should be worn. Closed shoes are recommended. Sandals are not approved by the UT Safety office as appropriate for laboratory work.

No University equipment (including computers) or materials should be taken from the building without permission of the supervising professor and the Dean's Office. All laboratories and offices should be closed and locked when personnel are not present.

## **F. PURCHASING**

When materials required by a student for research are not available in the College, the student should fill out a purchase requisition and take it to the supervising professor for signature and further processing. The requisition form must include all information: account name and number to be used for the purchase, name of item, supplier and address, and vendor identification number, catalog number, quantity and price, and person contacted at the vendor. The form should be signed by the supervising professor. In general, each laboratory has a set of purchasing procedures which should be followed. Failure to follow prescribed procedures may delay the acquisition of research supplies.

## **G. PHOTOCOPYING**

Photocopying on College machines is charged to the Pharmaceutics Division operating expenses. The graduate student may receive a copy card from the divisional secretary to copy scientific literature at the Life Science or other campus libraries, although in some cases the student's research supervisor will be required to provide the copy card. A graduate student's course notes and other personal material will not be copied on College machines, nor paid for on any university account. Downloading pdf files of scientific papers, and printing them in the Division is encourage as opposed to using copy cards.

The duplicating machines in the 4<sup>th</sup> floor office suite are available for use by all graduate students, postdoctoral students, and technicians during the day. If these machines are broken, you will need to wait or ask your Research Supervisor for help in copying.

## **H. USE OF TELEPHONES AND FAX MACHINES**

Telephones and fax machines in the College of Pharmacy are for business purposes. The graduate student should not make or receive personal telephone calls, except on a very limited basis. No personal phone calls may be charged to the University phones. Long distance calls involving University business require an access code which can be obtained from your Research Director. This code is confidential and must not be given to others.

## I. PREPARING REPORTS AND MANUSCRIPTS

The research proposal and progress reports for the graduate project should be prepared according to an outline of topics somewhat as follows:

- Research objective, aims, purpose
- Background literature and previous work in the field
- Experimental procedure. Proposed materials and equipment
- Results to be expected
- Bibliography

The thesis or dissertation should follow a similar outline:

- Aims and literature survey
- Experimental portion (equipment, materials & procedures)
- Results (data obtained)
- Discussion (analysis of results)
- Summary and conclusion
- Bibliography
- Appendix

Format: A style book of the format required by the *European Journal of Pharmaceutics and Biopharmaceutics* may be used. Consult with the supervising professor for proper use of abbreviations, spellings, hyphens, decimal places, and statistical treatment of the data. In addition, useful monographs on scientific writing are available.

## J. COPYRIGHT REGULATIONS

If copyrighted material is used in the dissertation, the student must get the written permission of the copyright owner. Microfilming is the same as publication and the writer is responsible for any copyright material in the published thesis or dissertation. The student must sign a disclaimer against any harm to the University should a copyright holder sue when the student has used the copyrighted material of another person in the dissertation without appropriate permission. Thus, the graduate student should adhere to the copyright laws. Copyright laws also apply to computer software, and students are expected to obtain legal copies of all software used in their work.

## K. GRAPHICAL METHODS AND DRAWING EQUIPMENT

The student should become familiar with specific requirements made by the Graduate School, the editors of journals, and the supervising professor before preparation of graphs, tables, photographs, etc. A hastily or poorly drawn graph, although it may be supported by careful experimentation and valid data, will reflect poorly on the quality of work and on the author.

### DUPLICATING AND BINDING:

The thesis or dissertation can be reproduced to yield multiple copies by relatively inexpensive offset or photocopy methods which give a professional appearance to the document. Bindings in a number of styles are available; your supervising professor and the degree clerk in the Graduate School Office will assist you with decisions about duplicating, binding and other matters regarding the thesis or dissertation. The finished work represents the results of your efforts; you will want it to have the appearance of the finest quality possible.

## L. THE RESEARCH NOTEBOOK

The manner in which you keep records of research work in your notebook is of the greatest importance. Your research supervisor will provide specific instructions for each student in the lab. The following points are worth noting.

1. Use a notebook providing carbon-page duplicates which may be removed and kept by you or the supervising professor in a safe place. This prevents loss from fire or other causes which could require that you re-do much of your work. When finally completed, the research notebook remains the property of the supervising professor. The student retains the tear out sheets. Alternately, the student may photocopy the notebook.
2. The notebook is for recording all data as it is collected. Do not use scraps of paper to record weights, spectrophotometer dial readings, etc. for later transfer to the notebook. Instead, enter all data directly into the notebook.
3. Computer print-outs, hand-prepared graphs, photographs, chromatograms must be pasted into the notebook at the appropriate point. Sometimes a more satisfactory practice is to keep a separate loose-leaf folder for large or bulky recordings such as computer results. The pertinent data from such sheets should be recorded in the notebook when received, and a reference made to the loose leaf folder and page number where the original document is located.
4. The researcher must never rely on memory for data keeping. Data should be recorded in the notebook immediately when gathered. All information - dial settings, temperatures, formulas of reagents, company sources of equipment and supplies, reference standard values must be recorded. All calculations should be shown clearly, so there would be no problem in repeating the operation at later time by another investigator. Scratch work should be done in the notebook, then followed by the neater and more orderly steps of calculation.
5. Sketches for apparatus, ideas for new approaches, references to pertinent literature should be included -- clearly marked as such -- in the notebook.
6. It is of great importance to include the reason for conducting each experiment and a discussion on the meaning of the results obtained. Any reasons for repeating the experiment or conducting a new or modified experiment would be included at this point.
7. It is better to be verbose than too brief in recording procedures, results and impressions in the notebook. If one notebook is filled, the recordings are continued in a second, third, etc. book, each properly identified: I, II, III, etc. with the title of the project and the experimenter's name.
8. At the beginning of each day, the experimenter dates the page. At the end of each day's recording, the experimenter should place the date and full signature at the bottom of the last written page. If significant results are being collected which could become the subject of a patent, or otherwise needed for legal proof at a later time, a second person close to the work should co-sign each page. No erasures should be made and no space left unused on a page if the document is liable to be needed in a courtroom at some later time.
9. All data belong to the supervising professor, not the student. This means that all original laboratory notebooks remain with the supervising professor after the student completes their program of study.

## **M. SUPERVISING PROFESSOR AND GRADUATE STUDENT**

Early in the graduate career, the student will discuss program interests with members of the graduate faculty. Following the establishment of the supervisor-student relationship, the student and professor will meet to decide upon the student's didactic and research activities. The supervising professor will direct the student's work toward the advanced degree.

The supervising professor acts as the chair of a supervising committee to be chosen at the time of application for candidacy. The professor is chair of the preliminary examining committee and the dissertation committee, and will determine whether or not the student should bypass the M.S. degree and work directly toward the Ph.D. degree. The professor supervises the research work and writing of the thesis, dissertation or report, and assists the student to resolve difficulties as they arise. It is not the responsibility of the supervising professor to remind the student of deadlines specified by the Graduate School, the need to maintain satisfactory grades in coursework, etc. In graduate school, it is expected that each student will develop self-responsibility, maturity of purpose, and an ability to design and plan work activities. Each graduate student exhibits a unique personality, and must be dealt with differently. The supervising professor, in most instances, will direct the beginning M.S. or Ph.D. student rather closely, then gradually pass on more responsibility as the student gains experience and knowledge. At the point of Ph.D. candidacy, the student should be making most of the decisions, writing clearly, planning and executing the work in a way that leads to results of the highest quality and integrity.

## **N. GRIEVANCE PROCEDURE FOR GRADUATE STUDENTS**

The Graduate Guide Information Handbook of the University of Texas describes grievance procedures. Ordinarily, grievances between students and instructors are resolved informally. If such efforts fail, the Graduate Advisor and/or Chair of the Graduate Studies Committee in the College of Pharmacy, together with the Dean of the College, will consider the matter. (Refer to the Graduate School Policy Manual for details of the procedure. The Handbook is available in the Graduate School Office and on the web: <http://www.utexas.edu/ogs/publications/index.html>).

## **O. FINANCIAL SUPPORT**

The graduate student should check with the supervising professor or Graduate Advisor for availability of financial support during the tenure in the graduate program. Assistantships of all kinds are for services rendered, and are not to be construed exclusively as a subsidy for graduate education.

## **P. TEACHING ASSISTANTSHIPS (TA)**

Teaching Assistantships may be provided as a form of support for students. The stipends for these various levels change from year to year. The usual expectation for a Teaching Assistant is to spend approximately 20 hours per week in the performance of duties. TAs are also expected to meet all requirements established by the Supervising Professor to ensure satisfactory progress toward the Ph.D. degree. (Note: TAs appointed one-half time (20 hours per week) for 16.5 weeks qualify to pay resident tuition, and to enroll in the University staff health insurance plan).

## **Q. RESEARCH ASSISTANTSHIPS (RA)**

The Research Assistant receives a wage based on the specific grant or contract on which the student is supported, and the number of hours per week employed. Salaries and wages for research assistants are found on the student academic appointments rate information website: <http://www.utexas.edu/hr/comp/studentrates.html>. (Note RAs appointed one-half time (20 hours per week) for 16.5 weeks qualify to pay resident tuition, and to enroll in the University staff health insurance plan).

## **R. UNIVERSITY FELLOWSHIPS**

These are awarded to first year and advanced graduate students on the basis of departmental nomination. Selections are made on the basis of merit, rather than need. One or two of these fellowships have been held by Pharmacy graduate students in a given year.

## **S. OUTSIDE FOUNDATIONS**

Foundations, such as the American Foundation for Pharmaceutical Education, provide fellowship aid. The student should check with the Graduate Advisor or supervising professor for assistance in applying to an outside agency for support. Competition for these fellowships is keen and 3-4 students may hold them in a given year. Additional sources of aid can be found in directories located in the Main Building Library, Graduate Student Office, and the Hogg Foundation Library on campus. There are also numerous web sources of information students can consult.

## **T. OUTSIDE EMPLOYMENT**

Outside employment is discouraged as it tends to interfere with graduate education and the student's progress toward a degree. Outside employment includes any employment outside the university. It also includes any additional employment within the university that is not directly related to the student's progress that was not preapproved by the Supervising Professor (an example is a student employed as a GRA who takes on additional work as a TA or grader). Outside employment must be approved in advance by the Supervising Professor. If the student has not yet chosen a Supervising Professor, it must be approved by the Academic Advisor. If approval is not sought in advance, its termination may be mandated by these supervisors.

## **U. GRADUATE STUDENT ORGANIZATIONS**

The Pharmacy Graduate Student Association (PGSA) represents all graduate students in the College of Pharmacy. The president of this organization serves as a liaison to the Dean of the College and assists in obtaining funding for students wishing to attend professional meetings to present papers or have job interviews. Also, the PGSA provides a means for selection of graduate student representatives for Graduate Council, Graduate Assembly, and the three sub-committees of the Graduate Studies Committee.

## Appendix 1. Checklist for Progressions in the Graduate Program (update yearly)

**Name:**

**Today's date:**

<b>Date entered program (mo/yr):</b>

Coursework	Course #	Course name	Sem- ester	Grade
Lecture course 1				
Lecture course 2				
Lecture course 3				
Lecture course 4				
Lecture course 5				
Other course (if applicable)				
Methods 1				
Methods 2				
Oral & written communication				
Ethics				
Statistics				

Safety and Compliance	Date
OH101	
OH201	
In-lab training	
Fire safety class	
Other training (specify)	
IACUC/IRB training & inclusion in protocols	

Labwork	PI name	Dates
Rotations (if applicable):		
Rotation 1		
Rotation 2		
Rotation 3		
Final Supervising Professor choice		

Progressions	Date	Committee members	Outcome
Qualifying exam		1	
		2	
		3	
		4	
Date entered candidacy		NA	
Supervising Committee		1	
		2	
		3	
		4	
		5	

<b>Seminars</b>	<b>Date</b>
Presentation 1	
Presentation 2	
Presentation 3	
Presentation 4	

## Appendix 2. Seminar Series

**General Guidelines:** Students must attempt to improve with each seminar. New students will be trained in the required Communication Skills course during their first year. New students should also watch experienced students and guest speakers and make decisions on how and how not to prepare and present seminars. After each seminar, the faculty will critique the speaker in order to facilitate improvement. Feedback may be oral or written according to the enclosed evaluation form. Students are required to keep copies of the written critiques. If the Division faculty deem a student's effort inadequate, the student may be required to repeat a seminar in the subsequent semester before being allowed to proceed to the next type of seminar.

**Student Introducers and Discussants:** In addition to presenting the required seminars and attending all seminars, students are expected to take part in the Q&A discussions following each presentation.

**Guidelines for a Worthwhile Talk:** The objective of the seminar speaker should not be to "get it over with"; rather, there should be an attempt to present some basic information in a chosen scientific area that will be worthwhile to most of the audience. This requires knowledge of the audience's background, skill in presentation, and ingenuity of thought.

Scientific speakers often seem to try to impress the audience with their skill in using the jargon or sophisticated language of their discipline. They often expect that it is the audience's responsibility to understand, to follow the intricate details, to fend off boredom, and to stay awake. Actually, it is the speaker's responsibility to keep it simple, intellectually fascinating, and exciting. A good rule of thumb is to aim at a diverse audience that generally has only slightly more knowledge of pharmacy than the man on the street.

Scientific speaking should present precise and accurate thinking in the most intelligible form. To accomplish this, the speaker must observe several basic principles:

- A. **Remember the listener.** This is the single most important principle. If the listener does not understand or is confused, the speaker must clarify the information.
- B. **Know your material.** If you do not understand your material, the audience cannot possibly understand it. Regardless of how much you hope you will be successful, you will almost always be embarrassed when your ignorance is revealed.
- C. **Be as organized as possible.** Clarity is a moral obligation. If the speaker presents the material in a disorganized fashion, everyone's time is wasted.
- D. **Use suitable visual aids.** Find out how to make impressive slides or transparencies. Slides of tables or graphs from books, poor quality photography, or unreadable slides frustrate everyone. At the least, the visuals should be LARGE; at the most, they should be colorful and fun.
- E. **Choose an interesting topic.** It is important to get an audience there in the first place. If you decide to talk about your own research, choose an attractive title such as "How Do Erythromycin Molecules Cross the Membrane?" Isn't this more enticing than "The Absorption Kinetics of Erythromycin in Solution"? Use your ingenuity!
- F. **Use the rules of public speaking.** If you feel uncomfortable or unsure in front of an audience, practice your talk many times first. Brush up on general rules on how to get an audience "with you". Develop a "feel" for the audience. If the audience appears disinterested or someone dozes off, it's a good clue that you're wasting everyone's time.

- G. **Keep your talk simple.** "Dejargonize" your talk by using simple terms and defining all words that the audience may not be familiar with. No one is interested in how well you can impress them with big words.
- H. **Be brief.** A speaker ought to be keel-hauled for running overtime. It is a fact that the average adult can concentrate on even the most interesting speaker for only about 20 minutes. Keep your talk 30-40 minutes, as a general rule, and leave time for questions. Near the end of your talk, audience members will tend to be distracted very easily. ("When is this person going to finish?")
- I. **Be enthusiastic!** The audience will usually be with you if you're confident and enthusiastic. Get them involved by asking frequent rhetorical questions for them to ponder. Make the information as personal as you can to them. ("Did you ever wonder whether Italian food will affect the absorption of erythromycin?") Use visual aids that are snappy, colorful, humorous, and unusual. Bring a prop or piece of equipment from the lab. Pound your fist on the table, mingle with the audience, tell a clever joke. Show some individuality and FLAIR in your speaking!

Remember - will you be happy with giving "just another boring scientific talk"? **NO!**

### **Appendix 3. Aims of graduate education in the College of Pharmacy**

A holder of an advanced degree from the College of Pharmacy, University of Texas at Austin should exhibit the following attributes:

1. Knowledge in considerable depth in one of the specialty areas of the pharmaceutical sciences.
2. Broad acquaintances with areas of pharmacy, basic science, and health fields related to this specialization.
3. Ability and industry to design, plan and execute independent and original projects, carrying them through to their successful conclusion.
4. Facility and willingness to instruct others, and to disseminate information to wider audiences in a clearly written or spoken manner.
5. A demonstrated sense of moral principles and character in relation to the chosen work. A commitment to honesty in research, publication, and dealings with others. A resolve not to compromise honesty, fairness or justice for self-interest, or because of urging of others in influential positions.

#### **Appendix 4. Statement on use and care of animals**

The Division of Pharmaceutics is dedicated to acquiring knowledge for the improvement of the health and safety of humans and other animals and the protection of their environment.

To fulfill this objective, the Division is committed to the design and conduct of the best possible scientific research. To ensure this commitment, the Division views as necessary the use of laboratory animals in research and testing except in those procedures where valid, scientific alternative techniques are available. The Division expects that each member shall observe the spirit as well as the letter of laws, regulations, and ethical standards with regard to the welfare of humans and animals involved in any experimental procedures. The Division supports careful consideration of the number of animals used and encourages reduction where scientifically feasible. The Division strongly encourages and supports the development of valid, scientific alternatives to current animal research testing procedures.

To become familiar with the regulations and guidelines governing the use of animals in research you are encouraged to contact the Animal Resources Center at 471-7534 or their web page (<http://www.utexas.edu/research/arc>) for a detailed outline of animal related research requirements.

Any student who fails to adhere to the University and NIH guidelines, regarding the handling, use and treatment of animals shall be subject to dismissal.

For further use on Animal care and use, and IACUC training information:  
<http://www.utexas.edu/research/arc/misc/training.htm>

## **Appendix 5. Research Involving Human Subjects**

The University adheres to the guidelines of the National Institutes of Health with regard to the involvement of human subjects in research. All faculty, staff, students, or employees who propose to engage in any research, demonstration, development, or other activity involving human subjects are bound by these regulations.

Doctoral proposals, as well as sponsored or unsponsored research, must first be submitted to the appropriate Departmental Review Committee and then (in most cases) be forwarded to the Committee on the Protection of Human Subjects Institutional Review Board (IRB) of the University.

Information about required procedures, agenda deadlines, and guidelines for preparing research proposals are available from the Office of Sponsored Projects, Main Building 303 (471-6424) or at <http://www.utexas.edu/research/osp/>. It is advisable to consult this office in the early stages of preparing a research proposal in order to facilitate the review process.

For further information on Human protocols and IRB information:  
<http://www.utexas.edu/research/rsc/humanresearch/index.html>

## **Appendix 6. Ethical Guidelines**

The mission of the College of Pharmacy is to assure its students the opportunity to receive an unsurpassed education in the field of Pharmacy, including working with members of the Pharmacy faculty on their grant-funded or other research. While enrolled, students who are provided such opportunities are expected to use the knowledge and experience obtained from them in a manner that promotes, and is consistent with, the College's mission. Activities or outside employment that interferes with a student's ability to promote the College's mission should not be undertaken. If in doubt whether an activity or employment situation is in conflict with the College's mission, a student should consult with his or her advisor or the Dean's Office prior to undertaking the activity or employment.

### **SCHOLASTIC DISHONESTY AND UNIVERSITY DISCIPLINARY PROCEDURES**

"Scholastic dishonesty" includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, and any act designed to give unfair advantage to the student, or the attempt to commit such an act. Detailed definitions of these infractions may be found in The University's *General Information Catalog*, Appendix C, Section 11-802. Detailed information also may be found under the Dean of Students on the Student Affairs web page at <http://www.utexas.edu/student/>. The following section is copied from this web page.