

College of Pharmacy Pharmaceutical Sciences

PhD Program Handbook 2024-2025



Oregon State University
College of Pharmacy

Table of Contents

Welcome	4
Program Contacts	4
OSU Graduate School	5
Student Resources	5
Student Advocacy and Support Services	5
Health, Wellness, and Safety	5
Pharmaceutical Sciences Program Information and Policies	6
Learning Outcomes	6
Communication	6
Your Major Professor	6
Research Rotations	6
Professional Advising	7
Safety	7
Graduate Appointments	7
Funding	8
Teaching	8
Literature Reading Good Practices	8
Seminars	8
Publications	8
Conferences	9
Annual Graduate Student Research Retreat	9
Waiver of Course Requirements	9
Grievance Procedures	9
Academic Requirements Overview	10
Degree Milestones	10
Annual Assessment of Progress	10
Registration	10
Minimum Course Loads	10
Credit Requirements	11
Continuous Enrollment	11
Leave of Absence	11
Unauthorized Break in Registration	12
Minimum GPA Requirement	12
Intellectual Property	12
Professional Activities	12
Ethics	12
Student Conduct and Community Standards	13
Academic Dishonesty	13
Office of Equal Opportunity and Access	13
Student Records	14
Committee Meetings, Exams, and Thesis	15
Program of Study	15
Graduate Committee	15
Committee Structure	15
Policy on Distance Participation in Committee Meetings and Exams	15
Preparing for the Program of Study Meeting	16
What to Bring to the Program of Study Meeting	16

Preliminary Exam	16
Completing the Preliminary Exam	16
Part 1: Written Thesis Proposal	17
Part 2: Oral Presentation	17
Characteristics of a Good Thesis Proposal	17
Structure of the Thesis Proposal	18
Final Examination.....	19
Completing the Final PhD Defense.....	19
Program Curricula	21
Systems Biomedicine	21
Targeted Drug Delivery	22
Drug Discovery.....	22
Elective Courses – All tracks	23
Pharmacy Professional Courses	24
Guidelines for the Concurrent Degrees of M.S. and Ph.D.....	25
Overview.....	25
Non-thesis M.S.	25
Thesis M.S.	25
Planning a M.S./Ph.D. Program of Study	25
Required Steps	26

Welcome

Welcome to the Oregon State University College of Pharmacy! Oregon State is a leading public research university that is the state's Land Grant university and is one of only three universities in the U.S. to have Sea Grant, Space Grant and Sun Grant designations. The College of Pharmacy at Oregon State places high priority on graduate education and the improvement of human health by advancing the discovery and understanding of medicines. We strive to prepare our graduate students of today to be the pharmaceutical sciences researchers of tomorrow. We are pleased that you have chosen to join our PhD program.

Program Contacts

The Department of Pharmaceutical Sciences is here to support you through every step of your degree and assist with all areas related to your graduate education. In addition to your major advisor, there are several main points of contact for the program:

Graduate Studies Chair – Kevin Brown, PhD

317 Pharmacy Building, Corvallis | kevin.brown@oregonstate.edu

The Graduate Studies Chair is responsible for day-to-day graduate student concerns, monitoring the curriculum, initial and continuing advising of new students, scheduling research rotations, and leading the new graduate student orientation. This role also coordinates GTA assignments, handles academic progress issues, coordinates nominations and awarding of graduate student awards and scholarships, and chairs the Graduate Studies Committee.

Graduate Program Coordinator – Noelle Cummings

207 Pharmacy Building, Corvallis | noelle.cummings@oregonstate.edu

The Graduate Program Coordinator assists with administration of the graduate program, including recruitment and admissions, orientation, graduate assistantship and fellowship appointments, graduate events coordination, and travel coordination. Students can contact the program coordinator to inquire about policies and procedures, such as travel and expenses, course overrides, and questions about their appointments.

Chair, Department of Pharmaceutical Sciences – Chrissa Kioussi, PhD

327 Pharmacy Building, Corvallis | chrissa.kioussi@oregonstate.edu

The department chair is responsible for oversight of all departmental faculty activities including teaching, research and scholarship. Students can reach out to the Department Chair with concerns or issues.

Associate Dean for Academic Programs – Theresa Filtz, PhD

203 Pharmacy Building, Corvallis | theresa.filtz@oregonstate.edu

The Associate Dean for Academic Programs is responsible for oversight of the curriculum, courses, schedule, policies and procedures in the PharmD, PhD and MS programs in the College of Pharmacy. The ADAP can help you navigate academic issues and special situations.

Associate Dean for Research – Oleh Taratula, PhD

Robertson Life Sciences Building, OHSU, Portland | oleh.taratula@ohsu.edu

The Associate Dean for Research is responsible for oversight of all the College's research activities. The ADR can provide support and guidance in your research.

Dean – David Bearden, PharmD

Robertson Life Sciences Building, OHSU, Portland | beardend@ohsu.edu

The Dean is the College's Chief Executive Officer responsible for planning, oversight and implementation of all college functions including budgeting, facilities, faculty, research, and external relations.

OSU Graduate School

The Graduate School at OSU assures quality and consistent interpretation of Graduate Council policies related to graduate education across all programs. The [OSU Catalog](#) is the official source for information regarding OSU graduate education policy and procedures. It is the student's responsibility to refer to the catalog for this information. The Graduate School supports students throughout the academic [lifecycle](#), from admissions to degree completion.

The Graduate School, and its campus partners, offer an array of [professional development opportunities](#) specific to the success of graduate students. Topics include research and ethics, teaching and facilitation, writing and communication, leadership and management, career skills, grad life and wellness. Please visit the Graduate School links to browse student success offerings.

Student Resources

Oregon State University offers a comprehensive and wide range of resources, support, and opportunities for engagement. Learn more about the [OSU Experience](#) and [Graduate Student Resources](#).

Student Advocacy and Support Services

- The [Ombuds Office](#) provides informal and impartial conflict resolution services for all members of the University community.
- The [ASOSU Office of Advocacy](#) helps students who have a dispute with a member of the University.
- The [Office of Equal Opportunity and Access](#) ensures equal opportunity by responding to discrimination or harassment concerns or complaints, implementing policies and practices, and giving advice and guidance, related to affirmative action and equal opportunity.
- The Office of Institutional Diversity provides a page describing the [bias incident response](#) process and a link to a report form.
- The [Basic Needs Center](#) works to alleviate the effects of hunger, poverty, and other human needs so that students can pursue a quality education. Services include a textbook lending program, emergency food pantry, emergency housing assistance, and self-service laundry appointments.
- [Diversity & Cultural Engagement](#) provides support for campus diversity and cultural centers.
- [Center for Advocacy, Prevention, & Education](#)

Health, Wellness, and Safety

- [Counseling and Psychological Services \(CAPS\)](#) provides mental health counseling, crisis care, referrals, individual and group therapy, and survivor advocacy and care.
- [Anytime Anywhere: MySSP @ OSU](#) is an app that gives all OSU students, including Ecampus students, immediate access by text or phone with a licensed mental health counselor, 24/7
- [Student Health Services](#) offers after-hours care, nurse advice line, immunizations, contraception, tobacco cessation, mental health, and allergy and asthma treatment, on-campus pharmacy, and more.
- [The Department of Public Safety](#) offers a variety of resources and services, including lost and found, after-hours passes, safety escorts on campus, and vehicle jumpstarts.
- [ASOSU SafeRide](#) is a student-fee funded service providing students with safe rides around campus and within the Corvallis and surrounding areas.
- Sign up for [OSU Alert Notifications](#) to receive emergency notifications and timely warnings, such as weather delays or closures.

Pharmaceutical Sciences Program Information and Policies

The Ph.D. in Pharmaceutical Sciences is a 5-year research-oriented program designed to meet each student's career interests and goals. Our faculty members have strengths in all areas of pharmaceutical science, and many have been recognized for teaching excellence, outstanding research and professional activities. Research focus areas include drug discovery, systems biomedicine, and targeted drug delivery.

Learning Outcomes

Upon graduation we expect that pharmaceutical sciences doctoral graduate students will be competent to:

- Produce and defend an original and significant contribution to knowledge.
- Demonstrate mastery of subject material.
- Conduct scholarly or professional activities in an ethical manner.
- Design logical and realistic solutions to problems in pharmaceutical sciences by using critical thinking and analytical skills.
- Effectively design an experimental approach and conduct research to advance knowledge in pharmaceutical sciences.
- Effectively communicate research findings including impact on human health.

Communication

Faculty and staff in the College of Pharmacy need to communicate information to students regularly. All students are required to use their ONID (and OHSU for those based at the Portland campus) for all official communications. Graduate students are expected to be in regular communication with their major professor, either through email and/or in person. Students should keep their major professor updated on research progress, discuss any challenges they encounter, and seek guidance on academic and professional matters as needed. Students should also communicate any planned absences in advance.

Your Major Professor

PhD graduate students work closely with their major professor (also called a major advisor) throughout their degree program. The major professor provides mentorship, oversees research and thesis development, provides primary academic advising, and chairs your program committee. They can also assist with professional development, such as guidance on publication, networking, and reviewing your CV.

Students admitted as a Graduate Teaching Assistant (GTA) and Graduate Fellow will select a permanent faculty member as their major advisor after the first year of enrollment. Some doctoral students may enter the program with a major advisor already selected, such as those who are admitted as Graduate Research Assistants who are fully funded by that faculty member, or those with their own funding.

Students may request a change of major professor for reasons including, but not limited to, academic or research misalignment, changes in research interests, or personal circumstances. Requests for a change should be made after an attempt to resolve any issues with the current major professor has been made, and only when a satisfactory resolution is not possible. Students can contact the Graduate Studies Chair for more information.

Research Rotations

Students admitted as Graduate Teaching Assistants or Graduate Fellows complete three research rotations during their first three terms of enrollment. Rotations are typically completed within the student's own discipline; however, students may be able to select a lab outside their discipline to gain a broader range of experience. The Graduate Studies Chair will consult with all new students to schedule research rotations. Students should register for a minimum of 3 credits of PHAR 601 Research each term they rotate.

Professional Advising

All PhD students will participate in professional advising throughout their program. Students will have three sessions during their first year (the first of which is academic based), and then one session each year thereafter. First-year sessions focus on planning for success, setting goals, and reviewing helpful resources. Subsequent advising sessions may provide students with opportunities for skill building, professional development, and general support.

	TOPIC	ADVISOR	WHEN
YEAR 1			
Session 1	Lab rotations, first term registration, etc.	Graduate Studies Chair	Prior to the start of your first term
Session 2	Personalized Plan for Success/Goals/Resources	Head Advisor/Graduate Program Coordinator	Week 2 or 3 of your first term
Session 3	First year review	Head Advisor/Graduate Program Coordinator	Typically Spring or Summer term
YEARS 2-5			
Session 1	Support/Skill building/Professional Development	Head Advisor/Graduate Program Coordinator	Typically Winter or Spring term

Safety

Before beginning work in any laboratory or starting a new protocol, discuss laboratory safety with your rotation advisor or major advisor. At a minimum, students working in College of Pharmacy research labs should wear a lab coat, closed-toe shoes, leg coverings, gloves, and safety glasses at the bench. For more detailed requirements and information on specific lab tasks (e.g., chemical safety, biosafety), refer to the [OSU Environmental Health and Safety website](#). If you are unsure about a procedure, operating equipment, or entering a new area, always ask for guidance.

If you are working late or odd hours, you must obtain a Department of Public Safety After Hours Pass. Passes are available at the College of Pharmacy main office. Additionally, check to see who is in the building and inform them of your presence. Many labs have adjacent neighbors with shared doors; get to know your neighbors and check in on them.

Never allow anyone you do not know into the locked building after hours or on weekends and ensure that external doors are securely closed behind you when you leave. There have been instances of equipment theft from unlocked labs and unauthorized individuals occupying the building. Laboratory doors should be locked during the day if no one is present.

Graduate Appointments

Graduate Assistants are employees with a designated FTE (Full-Time Equivalent), which determines the number of hours they are contracted to work. Graduate students in Pharmaceutical Sciences are currently appointed at 0.43 FTE, or approximately 17.2 hours per week. In return, students receive a monthly stipend, tuition remission, contributions toward mandatory fees, and contribution towards the graduate health insurance premium. Appointments at OSU are governed by the collective bargaining agreement between OSU and the Coalition of Graduate Employees, American Federation of Teachers Local 6069.

Graduate Fellowships are traineeships and are not considered employment. Fellowships provide a living stipend, coverage for graduate fellow health insurance premiums, tuition support, and may also include support for mandatory fees, without a corresponding service requirement. Graduate Fellows are not employees of OSU, and their appointments are not governed by contractual bodies.

Resources for Graduate Assistants, including benefits and the CGE collective bargaining agreement, can be found [here](#). Article 30 of the Collective Bargaining Agreement addresses paid sick leave accrual. Sick leave accruals are available at the beginning of each academic term and accrual balances can be viewed by the graduate employee in EmpCenter, OSU's time and attendance reporting system. Pharmaceutical

Sciences graduate assistants at .43FTE accrue 11 hours of paid sick leave per term. Graduate Assistants are required to submit monthly timesheets indicating any sick leave used. Graduate Assistants are not eligible for paid vacation leave.

Funding

The College of Pharmacy offers a limited number of GTA appointments and NIH T32 Fellowships (in natural products research) each year. **Note that no more than five years of GTA and/or T32 Fellowship support will be provided to any one student.**

Funding for Graduate Research Assistants (GRAs) may be available through individual faculty with outside agency funding. The research performed by a graduate research assistantship is usually applicable to the doctoral dissertation. Graduate students admitted without funding should **not** expect that funding will become available at some point in their graduate program.

Students are encouraged to work with their major advisor to apply for the limited number of highly competitive [Graduate School awards](#) available each year. Look out for other internal and external award/fellowship opportunities that may be available.

Teaching

The Pharmaceutical Sciences graduate program does not have a formal teaching requirement. However, opportunities for gaining experience in the classroom are available for those wishing to teach PHAR 210 Terminology of the Health Sciences. Students also have the opportunity to earn a transcript-visible credential, a [Graduate Certificate in College and University Teaching](#).

Literature Reading Good Practices

Students are advised to spend one to two hours each week reading broadly within scientific literature. This includes reviewing journals such as *Science* and *Nature*, performing directed searches using PubMed or SciFinder, and utilizing automated literature retrieval services.

Create and maintain an electronic database of references using tools like Zotero®, Mendeley®, EndNote®, or Papers®. Regularly update this database and keep a file of manuscripts that are of greatest interest and importance. The OSU Valley Library offers regular tutorials on using reference management software to assist in organizing these papers.

Seminars

Pharmaceutical Sciences seminars are announced through the gspharm listserv and are mandatory for graduate students. Seminar topics outside of the student's discipline provide breadth to a program of graduate study that complements the depth necessary for successful thesis work. All graduate students should register for PHAR 507 Seminar each term.

It is also recommended to attend three to four seminars per month hosted by other units on campus, such as those offered through Toxicology, Biochemistry, Botany, Zoology, CGRB, Microbiology, Vet Med, etc. Take notes and keep a seminar book of ideas.

Publications

All Ph.D. students are required to have submitted a first-author manuscript containing primary research (not simply a literature review) for publication in the peer-reviewed literature prior to graduation. Work with your major advisor to prepare and submit your scholarly work to peer-reviewed journals in your field.

Conferences

All PhD students are required to attend at least one regional or national meeting and give a presentation (poster or oral) prior to graduation. Discuss conference attendance with your major advisor early in your degree program. Local, regional and/or national meetings provide opportunities for students in all disciplines to practice public speaking and engage in scientific discourse with fellow researchers in a variety of settings. Students in their 3rd – 5th year are encouraged to apply for the travel fund/awards through society or meeting websites. The Graduate School offers a Scholarly Presentation Award for graduate students presenting at conferences.

Attending a conference is a significant professional activity! Prepare by thoroughly reviewing the latest literature before the event. Make the most of the opportunity by engaging with as many people in your field as possible—talk with presenters at poster sessions, ask thoughtful questions during scientific talks, and participate in social events. Keep a conference notebook to jot down ideas, contacts, potential postdoctoral opportunities, and follow-up actions.

Annual Graduate Student Research Retreat

PhD students in year 3 and above are expected to present an oral presentation accompanied by a slide deck at the annual Rising Lecture and Graduate Student Research Retreat. Speak to your major advisor about preparing your presentation. Details about location and date are announced early winter term each year. Students may also be required or encouraged to create a poster. More information will be available closer to the event.

In preparation for creating a research poster, students should visit [Media Hub's](#) poster tips and [Creating Effective Poster Presentations](#), a resource from North Carolina State University.

Waiver of Course Requirements

Students who, in consultation with their major advisor, wish to waive any of the Pharmaceutical Sciences program requirements need to submit a letter to the Chair of the Graduate Studies Committee. The letter should explain the reason for the waiver request and be co-signed by the major advisor. If approved, the committee will issue a letter to be included with the student's Program of Study and kept on file.

Grievance Procedures

Students are strongly urged to bring issues of grievance, preferably in the following order, to 1) your rotation or major advisor 2) the Graduate Studies Chair 3) Graduate Program Coordinator or Head Advisor and 4) the OSU Graduate School.

All students desiring to appeal matters relating to their graduate degree should follow the [Grievance Procedures for Graduate Students](#).

Graduate assistants, whose terms and conditions of employment are prescribed by the [collective bargaining agreement](#) between OSU and the Coalition of Graduate Employees, American Federation of Teachers Local 6069, should also refer to that document and seek guidance from OSU's Office of Human Resources.

Academic Requirements Overview

The Graduate School at Oregon State University sets minimum requirements for graduate degrees. However, the College of Pharmacy has established more stringent requirements in some cases. Specifically, the College requires that the Program of Study and first committee meeting be held within four terms of enrollment, and the oral preliminary exam be completed within 9 academic terms of starting a Ph.D. program.

Degree Milestones

Graduate students are expected to make satisfactory progress towards their doctoral degree by meeting established degree milestones. If a student fails to make satisfactory progress, as determined by their major advisor, the Pharmaceutical Sciences Graduate Studies Committee, or the Graduate School, the student may be dismissed from the program and Graduate School. See [degree completion steps and deadlines](#) for full details and timeline.

After completing all required coursework and submitting their manuscript(s) for publication, graduate students must consult with their major advisor and committee members to ensure they are ready for their defense and to confirm the timing of their graduation.

Any doctoral student who fails the preliminary oral examination, with a committee recommendation that the student's work toward this degree be terminated, may be dismissed from the Graduate School. Any student who fails a final oral examination may be dismissed from Graduate School. Academic dishonesty and other violations of the [Student Conduct Code](#) may serve as grounds for dismissal from the Graduate School.

PhD students who do not meet required program or university deadlines may face loss of funding and or dismissal from the program. Consequences are at the discretion of the major advisor, Graduate Studies Committee, and Department Chair.

Annual Assessment of Progress

Starting in the second year, students and advisors are required to complete an annual assessment of progress and hold an annual committee meeting. The annual assessment may be discussed with the student's graduate committee if needed. The results of these assessments are reviewed by the Graduate Studies Chair who will provide feedback to students as needed.

Registration

The [OSU Schedule of Classes](#) is available online and contains academic regulations and registration procedures that apply to all students in the university, as well as the final examination week schedule. The online [catalog](#) is the source for up-to-date changes for the current and immediately upcoming term. It is your responsibility to register for the appropriate number of credits that may be required for any funding eligibility and/or to meet the requirements of the continuous enrollment policy. Problems arising from registration procedures, such as late registration, adding or withdrawing from courses after deadlines, or late changes from letter or S/U grading are resolved through the [petition for late change in registration](#) filed with the Graduate School. A late registration fee may be applied.

Minimum Course Loads

Course load requirements for graduate students are established by the Registrar and the Graduate School. You are considered a full-time graduate student if you are registered for 9–16 credits in a given academic term. You are considered a part-time graduate student if you are registered for less than 9 credits in a term. If you are a degree-seeking student, you must be registered for a minimum of three graduate credits in any term you wish to be enrolled in and access university resources, including the term of the final defense.

Students are responsible for staying current on course load requirements that may supersede the Graduate School requirements (i.e., international, financial aid, veteran's).

Credit Requirements

OSU requires a total of 108 credits for a Ph.D. degree, including 27 credit hours of didactic course work. "Didactic courses" exclude thesis, seminar, and reading and conference classes ("blanket credits", meaning courses with a "0" in the middle number, e.g., PHAR 507). With the exception PHAR 603 (thesis research), students may only include a maximum of 15 blanket credits on their program of study. Despite this OSU rule, all Pharmaceutical Sciences graduate students should register for 1 credit of PHAR 507 Seminar each term.

Students appointed as a GRA or a GTA with a tuition waiver must enroll for the maximum number of credits each academic term (16) and 3-5 credits in summer term using a variable number of units of PHAR 601 Research or PHAR 603 Thesis to fill out their schedule as needed. Although Graduate Assistants are only required to enroll in 3 credits during summer term, a graduate student who is enrolled in less than 5 credits is subject to additional taxes, fees, and withholdings (ex. FICA taxes).

Continuous Enrollment

All graduate students enrolled in a degree program must register continuously for a minimum of 3 graduate credits each term (fall, winter, and spring terms) until all degree requirements are met, regardless of student's location. Students on approved leave are exempt from the continuous enrollment policy for the term(s) they are on leave.

Graduate students who use facilities or faculty/staff time during summer session are required to register for a minimum of 3 credits during the summer session. Students defending in the summer term are required to register for a minimum of 3 graduate credits.

If extraordinary circumstances arise, students may appeal the provisions of the continuous graduate enrollment policy by submitting a detailed request in writing to the Dean of the Graduate School. Scheduling difficulties related to the preliminary oral exam or the final oral exam are not considered an extraordinary circumstance.

Graduate assistantship eligibility requires enrollment levels that supersede those contained in this continuous enrollment policy. Various agencies and offices maintain their own registration requirements that may exceed those specified by the continuous enrollment policy (e.g., those of the Veterans Administration, Immigration and Naturalization Service for international students, and those required for federal financial aid programs.) Therefore, it is the student's responsibility to register for the appropriate number of credits that may be required for funding eligibility and/or compliance as outlined by specific agency regulations under which they are governed.

Please discuss the continuous enrollment policy with your major advisor or the Chair of Graduate Studies if you will be taking any time off from your studies for any reason, including leaving for an internship during the academic year. Requests for leave of absence must be filed at least two weeks before the beginning of the term.

Leave of Absence

Leave of Absence status is available to eligible students who need to suspend their program of study for good cause. The time the student spends on approved leave will be included in any time limits prescribed by the university relevant to degree completion. Students on approved leave may not a) use any university facilities, b) make demands upon faculty time, c) receive a fellowship or financial aid, or d) take course work of any kind at Oregon State University. [Leave of Absence/Intent to Resume Graduate Study Forms](#) must be received by the Graduate School at least 15 working days prior to the first day of the term involved.

Family Medical Leave (FML) may be granted at any point during a term. FML inquiries should be directed to medical.leave@oregonstate.edu.

Unauthorized Break in Registration

Degree seeking graduate students who take an unauthorized break in registration relinquish graduate standing at the University. To have graduate standing reinstated after an unauthorized break, students are required to reapply to their program (complete the online graduate admission application, pay the application fee, and may be required to register for three graduate credits for each term of unauthorized break in registration). It is advisable that students in this situation state that they are applying for readmission in the application packet. A reapplication does not ensure admittance to the program.

Minimum GPA Requirement

A grade-point average of 3.00 is required: 1) for all courses taken as a degree-seeking graduate student, and 2) for courses included in the graduate degree or graduate certificate program of study. Grades below C (2.00) cannot be used on a graduate program of study. A grade-point average of 3.00 is required before the final oral or written exam may be undertaken. Enforced graduate-level prerequisite courses must be completed with a minimum grade of C.

Intellectual Property

Please consult your major advisor and [OSU Advantage](#) regarding any issues related to intellectual property in connection to your work at OSU.

To learn more about intellectual property and inventorship see below and/or ask faculty:

[Introduction to Intellectual Property: A U.S. Perspective](#)
[Determining Inventorship for US Patent Applications](#)

Professional Activities

Join a scientific society as a student member. The College of Pharmacy has a chapter of the American Association of Pharmaceutical Sciences (AAPS) that all students, MS, PhD and PharmD, are encouraged to join. AAPS provides funds for a seminar speaker every year chosen by the student members. Most regional and national societies (e.g., American Society for Pharmacognosy (ASP – natural products), Society of Toxicology (SoT), Society for Neuroscience, American Society for Pharmacology and Experimental Therapeutics (ASPET) etc.), have reduced rates for students, allow members to apply for travel awards to conferences, provide job search opportunities, and other benefits. Societies are one means to be involved in the future of your profession.

The College of Pharmacy Graduate Studies Committee includes one graduate student member. Nominations are collected and the graduate student body votes to elect a member. ASOSU is OSU's student governing body and includes the ASOSU Senate which includes graduate student members. More information can be found at [ASOSU](#).

Ethics

The ethics involved in scientific research are numerous, including a responsibility to be a wise steward of the public's money by avoiding unnecessary spending, working diligently, and reporting all work honestly.

Graduate students have a responsibility to keep accurate and detailed lab notebooks for future reference and to acknowledge everyone who provides intellectual, physical, and monetary support.

All graduate students are required to complete training in scientific research ethics which can be fulfilled by GRAD 520 Responsible Conduct of Research. Students should note that while this course is currently available in-person and online through OSU Ecampus, the online section does not meet requirements for

in-person training for NIH trainees. Students funded by a T32 or F31 training grant should discuss other options for meeting the NIH requirement with their major advisor.

Student Conduct and Community Standards

Graduate students enrolled at Oregon State University are expected to conform to basic regulations and policies developed to govern the behavior of students as members of the university community. The Office of Student Conduct and Community Standards (SCCS) is the central coordinating office for student conduct-related matters at Oregon State University.

Choosing to join the Oregon State University community obligates each member to a code of responsible behavior which is outlined in the [Student Conduct Code](#). The assumption upon which this Code is based is that all persons must treat one another with dignity and respect in order for scholarship to thrive. Violations of the regulations subject a student to appropriate disciplinary action.

Academic Dishonesty

Academic Dishonesty is defined as an act of deception in which a student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the student's own efforts or the efforts of another. It includes:

- Cheating — use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.
- Fabrication — falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
- Assisting — helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).
- Tampering — altering or interfering with evaluation instruments or documents.
- Plagiarism — representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Office of Equal Opportunity and Access

The OSU Office of Equal Opportunity and Access defines sexual harassment as the following:

- Unwelcome* sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature when:
- Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or education;
- Submission to or reject of such conduct by an individual is used as the basis for employment or education-related decisions affecting such an individual; or
- Such conduct is sufficiently severe or pervasive that it has the effect, intended or unintended, of unreasonably interfering with an individual's work or academic performance because it has created an intimidating, hostile, or offensive environment and would have such an effect on a reasonable person of that individual's status.

**Employee conduct directed towards a student – whether unwelcome or welcome – can constitute sexual harassment under OAR.*

There are two confidential resources to discuss reporting options: Center Against Rape and Domestic Violence (CARDV) provides 24/7 confidential crisis response at 541-754-0110 or 800-927-0197, and OSU Sexual Assault Support Services is available weekdays at 541-737-7604.

Student Records

Both federal and state laws permit Oregon State University staff to release directory information (e.g. name, address, degree program, birth date) to the general public without your consent. You can prohibit the release of directory information to the public by signing the Confidentiality Restriction form available from the Registrar's Office. It will not prohibit the release of directory information to entities of Oregon State University that have a "need to know" to accomplish their required tasks. It further will not prohibit Oregon State University departments from including your name on mailing lists for distribution of materials that are essential to your enrollment at Oregon State University. See [Grades, Regulations, and Records](#) for more information.

Committee Meetings, Exams, and Thesis

Program of Study

The Program of Study is your plan for completing your degree and the Department of Pharmaceutical Sciences requires that it be completed no later than your fourth term in the program (excluding summer term). See [Program of Study](#) for full requirements and instructions for completing the online form.

Graduate Committee

Graduate students are required to form a graduate committee which guides your graduate coursework and research, and serves as your final examining committee.

Although OSU Graduate School policy requires the first committee meeting to be held no later than the fifth term of enrollment (not including summer term), the Department of Pharmaceutical Sciences requires the first committee meeting to be held no later than the 4th term of enrollment, not including summer term. Students appointed as Graduate Research Assistants going directly into a selected lab must hold their first graduate committee meeting within two terms of enrollment. This first committee meeting is referred to as the Program of Study Meeting as students will present their tentative Program of Study to their committee for review and approval.

The next committee meeting is generally the preliminary exam meeting held within nine terms of matriculation by College of Pharmacy policy (with an exception for dual degree students). After successful completion of the preliminary exam, a student is required to have annual committee meetings until graduation.

Committee Structure

A minimum of five members of the Graduate Faculty, including two from the department of Pharmaceutical Sciences, one from each declared minor field (if included), and a Graduate Council Representative are required. The major professor must be in the Department of Pharmaceutical Sciences or approved to serve as major advisor for the Pharmaceutical Sciences program (co-major advisors are allowed). Additional committee members can be selected from graduate faculty in other departments or programs who have been approved to serve on doctoral committees for the Pharmaceutical Sciences graduate program.

The GCR is a full voting member of your graduate committee. Select your GCR using the [online GCR list generation tool](#) and be sure to allow ample time for this selection process. A common outreach method is to email all possible GCRs at once using the bcc email option. This will allow you to efficiently reach out to those listed on the GCR generated list. If you run into difficulty finding a GCR to serve on your committee, you can re-generate the list until you find someone who is willing to serve.

To ensure fair, unbiased, and professional evaluation of graduate student work that could be endangered by conflicts of interest, certain precautions must be observed. Upon appointment to a graduate student's committee, faculty members must disclose to the departmental chair any personal relationships with other committee members which might create a real or perceived conflict of interest. Potential conflicts of interest include, but are not limited to, legal, family, and business relationships, living arrangements, and personal relationships. The department chair will review disclosures and take appropriate action to mitigate any conflicts of interest to ensure fair and unbiased committee conduct.

Policy on Distance Participation in Committee Meetings and Exams

OSU will allow any member of a graduate committee, including the student, to participate remotely via video conference in committee meetings. However, the College of Pharmacy requires that the student MUST be on an OSU campus for their preliminary oral and thesis defense exams. For a program of study meeting or a preliminary exam, the College of Pharmacy also requires that a faculty member be physically

present at the same remote site as the student participating remotely. Please consult the University policy on [Remote Access for Graduate Committee Meetings](#).

Preparing for the Program of Study Meeting

You and your committee will review your tentative Program of Study during this first committee meeting. Follow the steps below to prepare for this meeting:

1. Generate tentative Program of Study from the [online tool](#).
2. Select a Graduate Council Representative from the [online GCR generator tool](#). The GCR serves in the role of impartial committee member who advocates for the student and ensures that all rules governing committee procedures are followed.
3. Confirm other committee members and schedule a mutually acceptable meeting time.

What to Bring to the Program of Study Meeting

1. A tentative PhD Program of Study (one copy for each committee member).
2. Any waivers of programmatic requirements.
3. A current CV (one copy for each committee member).
4. A 1-3 page summary of research to date (emphasize graphic information) and a brief description of future work planned (one copy for each committee member).
5. A twenty-minute presentation on your research to date and plans for the future using a PowerPoint slide deck.

Note that your major professor may assist you with this material for your first program meeting (this is not an exam). Be sure to submit your final Program of Study to the Graduate School after the first committee meeting.

Preliminary Exam

The preliminary exam is a two-part exam consisting of a written thesis proposal and an oral presentation of the thesis proposal to your graduate committee. The exam is taken near or immediately after the completion of all didactic coursework, ideally early in the third year of study. All Pharmaceutical Sciences PhD students are required to complete the preliminary examination within nine academic terms (not including summer) of the start of their graduate studies.

An extension may be requested by students or faculty members who anticipate that a preliminary exam will not be completed within nine academic terms. The request is made to the Graduate Studies Committee detailing circumstances causing delay and providing a plan for completion.

Students who have not completed preliminary exams by the beginning of their tenth academic term will no longer be considered in good academic standing and will be reviewed by the Graduate Studies Committee. As a reminder, good academic standing is required for GRA or GTA support.

OSU allows for one dissenting committee vote at the oral examination. Students who fail a preliminary exam may, at the discretion of the student's committee, retake the exam after a minimum period of 30 days and before a maximum period to be determined by the student's exam committee but not to exceed 12 months. The College of Pharmacy allows only one retake of the preliminary exam.

Completing the Preliminary Exam

The Preliminary Exam must be completed by the end of the ninth term of enrollment. The instructions below outline the basic steps for completing the Preliminary Exam. Full instructions are in the following sections.

1. Begin working on your written thesis proposal and oral presentation.

2. Consult with your graduate committee to determine a date and time for the oral exam presentation.
3. Reserve a room for two hours. Students can reserve the Pharmacy Building conference room (213) by contacting the main office. Students can also request to use the Willamette West presentation space through Media Hub in the Valley Library. See [Studios and Spaces](#) for reservation details.
4. Submit the required online [Exam Scheduling form](#) to the Graduate School. Forms must be submitted at least two weeks prior to the exam date. Paperwork will be sent to your GCR from the Graduate School prior to the exam for completion at the exam.
5. Distribute your written thesis proposal to your graduate committee two weeks prior to your scheduled exam date.
6. Present your thesis proposal as scheduled.

Part 1: Written Thesis Proposal

The written portion of the exam is the student's thesis proposal, which must be distributed to all committee members at least two weeks prior to the scheduled oral examination. The committee will review the proposal within one week, and the major advisor will inform the student if it meets the required quality. If the written portion is approved, the oral examination will proceed as scheduled. If it does not pass, the oral exam will be canceled and rescheduled. In such cases, the student should consult with the major advisor and committee members to understand the issues with the written document, such as grammatical errors or missing sections.

For the second submission of the written proposal, the oral examination will take place regardless of the written exam's initial assessment. The student will have the chance to defend their proposal in the oral exam, irrespective of the preliminary evaluation. If the student fails either the written or oral exam, they may be allowed one retake of the oral exam at the committee's discretion. Only one retake of the oral exam is allowed.

Part 2: Oral Presentation

The oral exam involves a 15-20 minute presentation of the thesis proposal, followed by a Q&A session. Committee members will wait to ask questions until after the presentation is complete. Initially, questions will focus on the written thesis proposal but will then extend to broader topics related to the discipline and the student's program. Students are encouraged to practice with a "mock" committee of senior peers to prepare for these questions.

Students should consult with their major advisor on thesis proposal topics before drafting the preliminary proposal. However, faculty should not provide substantial input in the writing of the proposal. Faculty can assist with proofreading for grammar and ensuring correct grant structure. Students are encouraged to seek help from peers with unfamiliar techniques and to schedule "mock prelims" with senior graduate students for practice.

Characteristics of a Good Thesis Proposal

A creative proposal of your thesis project is written in the form of an NIH predoctoral PhD fellowship (F31) application (<http://grants.nih.gov/grants/guide/pa-files/PA-14-147.html>). The proposal should be limited to 7 single spaced, 11-point Arial font pages maximum for the narrative, excluding references. Use one-half inch margins (top, bottom, left, and right) for all pages. The proposal format and structure are described below:

- Builds on your area of expertise.
- Is hypothesis driven or addresses significant scientific need-based questions.
- Is based on a subject about which enough is already known that specific and focused hypotheses or experimental questions are readily developed.

- Does not have a fatal flaw at the outset, *e.g.*, – successful completion of a first aim is necessary for all subsequent aims. This common problem can usually be remedied by providing alternative hypotheses.
- Includes sufficient background information to permit an effective review without reviewers having to refer to the literature.
- Is written with clarity, correct grammar and spelling, and concision.

Structure of the Thesis Proposal (adapted from NIH SF424 R&R Application Guide):

1. *Specific Aims* (1 page). State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, *e.g.*, to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology.
2. *Research Strategy* (6 pages). Organize the Research Strategy in the specified order using the instructions provided below. Start each section with the appropriate section heading—Significance, Innovation, Approach. Cite published experimental details in the Research Strategy section and provide the full reference in the Bibliography and References Cited section.

(a) *Significance*

- Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

(b) *Innovation*

- Explain how the application challenges and seeks to shift current research or clinical practice paradigms.
- Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions.
- Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions.

(c) *Approach*

- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project.
- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
- If the project is in the preliminary stages of development, describe any strategy to establish feasibility, and address the management of any high-risk aspects of the proposed work.
- Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised.
- If research on Human Embryonic Stem Cells (hESCs) is proposed but an approved cell line from the NIH hESC Registry cannot be identified, provide a strong justification for why an appropriate cell line cannot be chosen from the Registry at this time. If an applicant has multiple Specific Aims, then the applicant may address Significance, Innovation and Approach for each Specific Aim individually, or may address Significance, Innovation and Approach for all of the Specific Aims collectively.

More information on writing an NIH-style grant proposal is available through the [NIAID website](#). This site includes helpful information on planning, formatting and writing NIH grants.

Final Examination

The final examination consists of the completed written thesis and the oral thesis defense before the student's graduate committee.

The oral defense includes a public, one-hour thesis defense followed by a one-hour closed session with the committee. Students should be able to describe the specific methodologies used, identify critical observations, defend conclusions made based on these observations, and place their studies in the broader context of bioscience research.

Students may pass the examination with up to one dissenting vote. If a student fails to satisfactorily defend the thesis, only one additional attempt is permitted and must follow a written appeal to the College of Pharmacy Graduate Studies Committee. The thesis defense must be completed within five years after the preliminary exam.

Students should allow 4-6 months, writing part-time to complete their written thesis. Students **must** consult the Graduate School's [thesis guide](#) for procedure, format and details. OSU allows two different formats for a graduate thesis, standard or manuscript. The student and major advisor should determine which format is appropriate.

Completing the Final Ph.D. Defense

Students should plan well in advance of their expected graduation term to ensure all degree and graduation requirements are met. Consult [posted deadlines](#) for each step of the process and for receiving your diploma.

1. Begin drafting your thesis. Provide thesis chapters to your major advisor for review as they are completed; proofread and spell-check beforehand.
2. [Apply to graduate](#) to receive your diploma. Students should submit the graduation application at the start of the term in which they plan to graduate. If you are graduating spring term, you must apply to graduate regardless of whether you will attend commencement.
3. Consult with your graduate committee to determine a date and time for the thesis defense. Plan to schedule the defense at least two months in advance.
4. Reserve a room for two hours. Students can request to use the Willamette West presentation space through Media Hub in the Valley Library. See [Studios and Spaces](#) for reservation details and other available spaces.

At least **2 weeks** before your final examination, complete the following tasks:

1. Submit the [online exam scheduling form](#) as early as possible so that the Graduate School has ample time to complete the required degree audit. **Important: the deadline for submitting the final exam scheduling form is STRICTLY enforced by the Graduate School. Late submissions risk being rejected, forcing the exam to be rescheduled. If the exam must be rescheduled to the next term, students may be responsible for 3 credits of tuition and fees.**
2. With the approval of your major advisor, distribute your thesis to your graduate committee.
3. [Email](#) your [pre-text pages](#) to the Graduate School
4. Send your exam date/time/location, thesis defense title, and a photo of you or your research to the Graduate Program Coordinator for use in distribution of your defense advertisement.
5. Complete the [Pharmaceutical Sciences Graduate Student Summary Report](#). This form will be routed to your major advisor and the Graduate Studies Chair and includes:
 - Papers published (full citation) and submitted
 - Manuscripts in preparation
 - Regional and national meetings attended and source of funding
 - Honors/fellowships/awards received

- Post graduation employment plans

Upon successfully completing your defense, complete the following tasks:

1. Complete any recommended revisions to your written thesis.
2. Upload your final thesis to [ScholarsArchive](#). To graduate the same term as your final exam, upload your thesis by the last day of the term. To graduate the following term without having to register, upload before the first day of the following term. Uploads are required within six weeks of your final exam. **Important note: If you do not upload by the start of the next term, you must register for 3 credits and may be responsible for tuition and fees.**
3. After submitting your thesis to ScholarsArchive, submit the [Electronic Thesis and Dissertation approval form](#) to the Graduate School.
4. Complete the College of Pharmacy Graduate Student Final Checklist.
5. If planning to participate in OSU Commencement, see [details and deadlines](#). If participating in the College of Pharmacy graduation ceremony, follow instructions provided by the College.

Program Curricula

Pharmaceutical Sciences doctoral students are required to take PHAR 525 (735), Foundations of Drug Action I (3 credits, fall term). Training in responsible conduct of research is also required and may be satisfied by enrollment in GRAD 520. Otherwise, the coursework to be completed in the first two to two-and-a-half years of the program varies based on disciplinary tracks. Guidelines for programs of study in drug discovery, systems biomedicine, and targeted drug delivery are provided, but students should consult their major advisor for specifics.

Graduate assistants should register for a minimum of 16 credit hours during the academic year (fall, winter, spring terms) and a minimum of 3 credits during summer term. Graduate assistants with a tuition waiver must enroll for the maximum number of credits each academic term (16) and 3-5 credits in summer term using a variable number of units of PHAR 601 Research or PHAR 603 Thesis to fill out their schedule as needed. Although Graduate Assistants are only required to enroll in 3 credits during summer term, a graduate assistant who is enrolled in less than 5 credits is subject to additional taxes, fees, and withholdings (ex. FICA taxes).

Students with a Graduate Fellowship appointment should register for 12 credits each term (fall, winter, spring) or as directed by the student's funding source. Summer term registration will vary depending on the student's funding source. Consult with your appointment requirements or contact the Graduate Program Coordinator for more information.

Systems Biomedicine

Systems Biomedicine is the study of mechanisms of drug action, including the search for new drug targets by understanding mechanisms of disease. Research in this area utilizes knowledge and techniques developed in a wide array of disciplines including biochemistry, molecular biology, cell biology, physiology, and increasingly, computational techniques. Note that CH = credit hours.

The required curriculum for this track includes:

- Minimum of 3 (usually 5 or more) credit hours (CH) of research rotation (PHAR 601) each academic term (fall, winter and spring) in the first year.
- 1 CH of Seminar (PHAR 507) every academic term of every year.
- Foundations of Drug Action I and II (PHAR 525 and 527, 3 CH each, or PHAR 735 and 737 for PharmD/PhD students), fall and winter terms, respectively.
- General Biochemistry BB 550 and 551 (3 and 4 CH, respectively) taught various terms or at least two terms of the BB 590, 591, and 592 (3 CH each) series.
- Introduction to Grant Proposal Writing, PHAR 669, 2 CH in fall term, usually in second year.
- Responsible Conduct of Research, GRAD 520, 2 CH, offered most terms.
- Diversity, Equity and Inclusion (DEI) training (quarterly in PHAR 507 seminar, or equivalent).

Students who have completed an upper-level undergraduate course in biochemistry may request a waiver of the requirement to take the Biochemistry series. A letter to the Graduate Studies Committee should explain the reason for the waiver request and be signed by the student's major advisor. If approved, the committee will issue a letter to be kept on file with the student's Program of Study.

The graduate minor in Biological Data Sciences is strongly recommended to provide training for students to apply modern approaches to this research area.

Alternatively, select courses in computational methods can be found under the BDS, MB, BOT, CS or ST course prefixes.

Students will need to choose elective courses in consultation with their major advisor to complete at least 27 major course (didactic) credits for the PhD degree.

Targeted Drug Delivery

Prerequisites: Students must be proficient in using computers. Insufficient computer skills may be remedied with undergraduate coursework, e.g., CS101. Students whose undergraduate degree is not in pharmaceutical sciences or pharmacy must take PHAR 733 and/or 734 to increase their background knowledge. Students are also expected to have or obtain background in calculus equivalent to MATH 251, 252, 253 or 254 (calculus series). Note that CH = credit hours.

The required curriculum for this track includes:

- Minimum of 3 (usually 5 or more) credit hours (CH) of research rotation (PHAR 601) each academic term (fall, winter and spring) in the first year.
- 1 CH of Seminar (PHAR 507) every academic term of every year.
- Foundations of Drug Action I (3 CH, PHAR 525 for PhD; 735 for PharmD/PhD students)
- Introduction to Grant Proposal Writing, PHAR 669, 2 CH in fall term, usually in second year.
- Responsible Conduct of Research, GRAD 520, 2 CH, offered most terms.
- Diversity, Equity and Inclusion (DEI) training (quarterly in PHAR 507 seminar, or equivalent).

Students will need to choose elective courses in consultation with their major advisor to complete at least 27 major course (didactic) credits for the PhD degree. A concurrent MS degree will require at least 3 additional didactic credits. Please see the section on a concurrent MS degree for more details.

Drug Discovery

Course requirements for two possible tracks within drug discovery, bioorganic chemistry, or molecular biology/biochemistry, are detailed below. Students will need to consult with their major advisor to discuss tracking and choice of electives. Note that CH = credit hours, except for in course codes, where CH = Chemistry.

The required curriculum for this track includes:

- Foundations of Drug Action I (3 CH, PHAR 525 for MS/PhD; 735 for PharmD/PhD students)
- Biochemistry (6 CH, BB 590, 591) in fall and winter.
- Bioorganic Chemistry (3 CH, PHAR 537, alternating years in winter)
- Structure Determination by Spectroscopic Methods (3 CH, CH 535, fall)
- Introduction to Grant Proposal Writing (2 CH, PHAR 669, fall).
- Responsible Conduct of Research (2 CH, GRAD 520, most terms).
- Diversity, Equity and Inclusion (DEI) training (quarterly in PHAR 507 seminar, or equivalent).

Students who have completed an upper-level undergraduate course in biochemistry may request a waiver of the requirement to take the Biochemistry series. A letter to the Graduate Studies Committee should explain the reason for the waiver request and be signed by the student's major. If approved, the committee will issue a letter to be kept on file with the student's Program of Study.

Students will need to choose elective courses in consultation with their major advisor to complete at least 27 major course (didactic) credits for the PhD degree.

Suggested Courses for the Bioorganic Chemistry Track

- Adv. Organic Chemistry CH 630, 631 (6 CH fall, winter)

Suggested Courses for the Molecular Biology/Biochemistry Track

- Biochemistry BB 592 (3 CH spring)

Elective Courses – All Tracks

Potential elective courses include (but are not limited to):

GRAD 542	The Inclusive Classroom: Difference, Power and Discrimination
BB 585	Applied Bioinformatics
BB 586	Advanced Molecular Genetics
BB 590	Biochemistry
BB 591	Biochemistry 1: Structure And Function
BB 592	Biochemistry 3: Genetic Biochemistry
BDS 599	Special Topics: ST/Intro to UNIX, LINUX
BDS 599	Special Topics: ST/Command-line Data Analysis
CH 540	Physical Chemistry
CH 541	Physical Chemistry
CH 661	Separations: Chromatography and Related Methods
IB 515	Science Communication: Making Your Science Matter
IB 538	Behavioral Neurobiology
MB 516	Immunology
MB 530	Bacterial Pathogenesis
MB 556	Microbial Genetics and Biotechnology
MB 668	Microbial Bioinformatics and Genome Evolution
NSE 519	Radiochemical Analysis
NSE 583	Radiation Biology
PHAR 547	Infectious Diseases and Treatments
PHAR 563	Cancer and Chemoprevention
PHAR 572	Applied Biopharmaceutics and Pharmacokinetics
PHAR 573	Current Topics in Pharmaceutical Sciences
PHAR 574	Nanomedicine I
PHAR 670	Introduction to Systems Biomedicine and Pharmacogenomics
PHAR 699	Special Topics in Pharmaceutical Sciences: ST/Gene Therapy
ST 511-ST 513	Methods and Data Analysis
ST 515	Design and Analysis of Planned Experiments
ST 521	Introduction to Mathematical Statistics
ST 522	Introduction to Mathematical Statistics
ST 531	Sampling Methods
ST 551	Statistical Methods
ST 552	Statistical Methods
ST 553	Statistical Methods
TOX 512	Target Organ Toxicology
TOX 575	Advanced Xenobiotic Metabolism & Disposition
TOX 580	Computational Toxicology and Risk Assessment
VMB 674	Vaccines and New Therapies

Pharmacy Professional Courses

The OSU Graduate Council approved the use of the following professional pharmacy student courses as eligible for use on a graduate student Program of Study. No other professional pharmacy courses have been approved.

PHAR 733	Pharmaceutics I
PHAR 734	Pharmaceutics II
PHAR 735	Foundations of Drug Action I
PHAR 737	Foundations of Drug Action II
PHAR 746	Pharmacy Management
PHAR 747	Infectious Diseases and Treatments
PHAR 748	Drug Actions in Immunology and Inflammation
PHAR 750	Pharmacokinetics/Biopharmaceutics
PHAR 752	Integrated Drug Structure, Action and Therapeutics I
PHAR 753	Integrated Drug Structure, Action and Therapeutics II
PHAR 754	Integrated Drug Structure, Action and Therapeutics III
PHAR 770	Advanced Pharmacokinetics
PHAR 773	EBM III: Evidence Synthesis and Decision Analysis
PHAR 776	PHARMA-CSI (advanced kinetics elective)

Guidelines for the Concurrent Degrees of M.S. and Ph.D.

Overview

All matriculating Ph.D. students can enroll concurrently in the degree of Master of Science (M.S.) in Pharmaceutical Sciences. Graduate students will have the opportunity to gain an M.S. degree *en route* to a Ph.D. degree, with the **required M.S. final oral exam being held immediately before the Ph.D. preliminary oral (candidacy) exam.**

In consultation with their major advisor and graduate program committee, students will select either a non-thesis or thesis M.S. degree, for which the Graduate School requirements are stated below. In either case, M.S. degrees require a total of 45 credit hours, and up to 9 credit hours of blanket courses *that are not part of the 'capstone' research project credits* can be counted towards this target. No more than 50% of the TOTAL credits can be slash courses (the 5XX component of a 4XX/5XX course). Training in the conduct of scholarly or professional activities in an ethical manner (e.g. GRAD520) is required.

An acceptable non-thesis M.S. program of study could be 30-33 credit hours of non-blanket graduate level classes (4XX/5XX, stand-alone 5XX, 6XX or approved 7XX), 3-6 credit hours of PHAR 501 (research rotation) as capstone, 1-3 credit hours of PHAR 507 (seminar) and 8-6 credit hours of other blanket courses (more PHAR 501, 507 or 505).

Non-Thesis M.S. (at least 45 credits) – most common

Didactic (lecture/theory) course credits: 30 (at least, can be more)

Capstone Project: 3-6 credits of PHAR 501

NOTE: additional PHAR 501 credits (but not 503 credits) can be added to the 'major courses' list to make up 45 credits in total. The maximum number of blanket numbered credits is 9, the maximum number of PHAR 501 credits that can be used is 15 credits in total.

Committee: The examining committee consists of three members of the graduate faculty. The major professor and one other committee member must be faculty in the department of Pharmaceutical Sciences. If a minor is included, the third committee member must be from the minor field. When a minor is not included, the third member may be from the Graduate Faculty at large.

Thesis M.S. (at least 45 credits)

Didactic (lecture/theory) course credits: 24 (at least, can be more)

Capstone research: 6-12 credit hours of PHAR 503

Committee: The examining committee consists of at least four members of the graduate faculty. The major professor and at least one other committee member must be faculty in the department of Pharmaceutical Sciences. If a minor is included, the third committee member must be from the minor field. When a minor is not included, the third member may be from the Graduate Faculty at large. The fourth member must be a Graduate Council Representative.

Planning an M.S./Ph.D. Program of Study

- The didactic course work from the M.S. program can be used for the Ph.D. program, except for 501 and 503 or other non-graded credits.
- The same thesis credits cannot be used for M.S. (thesis, PHAR 503, 6-12 credits) and Ph.D. (PHAR 603, ≥36 credits) degrees.
- First year graduate students should register for lab research under PHAR 501 (**non-thesis project**) or 503 (**thesis**), **NOT PHAR 601 or 603.**

Required Steps

1. Discuss with your major advisor and decide between a non-thesis or thesis M.S.
2. Submit a [concurrent degree \(change of degree\) form](#) to add your chosen M.S. degree BEFORE scheduling a first committee meeting and submitting a Ph.D. program of study or scheduling your Ph.D. preliminary oral exam.
3. Decide on three committee members for your M.S. program – one will be your major advisor for your Ph.D. It is recommended that the other two are members of your Ph.D. program committee. A GCR is required for a thesis-based M.S., but not for a non-thesis M.S.
4. Prepare both M.S. and Ph.D. Program of Study documents for your first committee meetings so that both will be circulated for signatures.
5. Finish your classes and research project requirements and prepare for your Ph.D. preliminary oral exam.
6. Schedule your final oral exam for your M.S. (2 hours) to start immediately BEFORE your PhD preliminary oral exam (2 hours). These exams (4 hours in total) both need to be scheduled with the Graduate School.
7. Ask your M.S. committee members to stay behind when your preliminary oral exam discussion and closed evaluation have been completed, so that they can discuss your M.S. degree requirements and completion.
8. Celebrate your M.S. in Pharmaceutical Sciences and Ph.D. candidacy!