

PHYSIOLOGY & PHARMACOLOGY
ACADEMIC GUIDELINES AND EXPECTATIONS FOR Ph.D. STUDENTS
(Years 2+)

The following pages outline the Guidelines governing all students electing to pursue the Ph.D. in the Graduate Program of the Department of Physiology and Pharmacology (PHPH). All students must complete the requirements described for the Program in Molecular and Cellular Biosciences (PMCB) and the Graduate Council of the Oregon Health and Science University (OHSU) School of Medicine.

The Ph.D. program is organized as follows:

- Year 1:** Complete PMCB requirements
- Year 2:** Complete the PMCB Qualifying Examination
 Undertake the research leading to the Ph.D. thesis
 Complete required and elective courses
 Attend and participate in Departmental Seminars and a journal club of choice as approved by Program Director
- Year 3+:** Create a Thesis Advisory Committee
 Continue research leading to the Ph.D. thesis
 Attend and participate in Departmental Seminars and a journal club of choice closest to thesis work as approved by Program Director
- Year 5:** Attend Ethics refresher course (e.g. CONJ 607)

REQUIRED GRADUATE COURSES IN PHYSIOLOGY AND PHARMACOLOGY

- | | |
|---------------------------|-----------|
| *CON 667 Organ Systems | 3 credits |
| OR | |
| *CON 669 Chemical Biology | 3 credits |

Fall Term Year 2:

PHPH 617:	Pharmacokinetics	2 credits
XXXX 606	Journal Club	1 credit
PHPH 607	Departmental Seminar	1 credit
PHPH 601	Research	8-12 credits
	Elective courses	<u>0-4 credits</u>
Second Year Fall Term Course Total:		16 credits

Winter Term Year 2:

PHPH 618	Receptor Pharmacology	2 credits
XXXX 606	Journal Club	1 credit
PHPH 607	Departmental Seminar	1 credit
PHPH 601	Research	10-12 credits
	Elective Courses	<u>0-4 credits</u>
Second Year Winter Term Course Total:		16 credits

Spring Term Year 2:

XXXX 606	Journal Club	1 credit
CON 667 OR CON 669		0-3 credits
<i>(Taken in Year 2 if not selected during Year 1 as part of the PMCB required courses).</i>		
PHPH 607	Departmental Seminar	1 credit
PHPH 601	Research	7-14 credits
	<u>Elective Courses</u>	<u>0-4 credits</u>
	Second Year Spring Term Course Total:	16 credits

Summer Term Year 2:

CON 605	PMCB Qualifying Exam	8 credits
PHPH 601	Research	8 credits
	Second Year Summer Term Course Total:	16 credits

Terms after Admission to Candidacy:

XXXX 606	Journal Club	1 credit
PHPH 607	Departmental Seminar	1 credit
PHPH 601	Research	14 credits
	Course Total	16 credits

Thesis Defense – Term Requirement:

PHPH 603	Dissertation	16 credits
Journal club, seminar series and research waived during final term		

A minimum of 135 credits are required for the Ph.D.

PHPH SPECIFIC COURSE REQUIREMENTS:

Students are required to:

- a. Register for and attend a 606 Journal Club Years 2 through the duration of the program (at least 9 credits required).
- b. Register for and attend the Departmental Seminar, PHPH 607 Years 2 through duration of program (total of at least 9 credits required). Students are required to give at least one 30-minute presentation on their research once per year in all post-qualifying years as part of the PHPH Graduate Student Seminar Series.
- c. Register for and complete CON 667 or 669 during the spring of years 1 or 2.
- d. Students are required to take two PHPH courses:
 - i. **PHPH 617:** Pharmacokinetics (2 credits, fall term) This course will provide students with an introduction to drug absorption, distribution, metabolism, and elimination.
 - ii. **PHPH 618:** Receptor Pharmacology (2 credits, winter term). This course will provide students with an introduction to the molecular mechanisms of drug action and the principles of drug – receptor interactions.

- e. Students wishing to be excused from taking a required course may petition the PH2 Steering Committee stating their reasoning. A majority vote of the Steering Committee is required for approval.
- f. Students must receive a grade of A or B in all required courses. Students not receiving an A or B in a required course must repeat that course the following year and failure to do so constitutes grounds for termination from the program. The required courses in PHPH for which this rule applies are PHPH 617 and 618.
- g. The grade of Incomplete is reserved for circumstances beyond the control of the student, (e.g. illness) preventing completion of the course requirements by the end of the fall term AND it is possible to complete the requirements within the subsequent term.
- h. Students failing a semester of research credits, (i.e. receives an 'NP- No Pass' on research) are immediately placed on academic probation. To return to good standing, the student must obtain a passing grade on the next term of Research (and all subsequent terms). Failure to do so constitutes grounds for termination from the program.

Pre-qualifier Students:

Students are required to notify and meet with their advisor immediately upon receiving an NP grade on Research. The advisor will suggest a course of action for correcting research performance.

Candidate Students:

After advancing to candidacy, students receiving an NP grade in Research will schedule a Thesis Advisory Committee meeting to take place within two weeks of receipt of the NP grade in Research. The Mentor and Thesis Advisory Committee will suggest a course of action that the student must follow in correcting research performance.

The courses PHPH 606 Journal Club and PHPH 607 Seminar require documentation of attendance in order to be considered for the grade of 'Pass.' Candidate students and their advisor may petition the PHPH Program Director to substitute another formal journal club. Only excused absences (e.g. for participation at scientific conferences, or illness) are allowed. A graduate student with more than one unexcused absence will receive a failing grade of 'No Pass' and will be placed on immediate academic probation. The student must receive a 'Pass' the subsequent term and every term thereafter.

Following receipt of the first 'No Pass,' a pre-qualifying exam student must immediately meet with their TAC advisor; a post-qualifying exam student must immediately meet with their thesis advisory committee. A plan for insuring the attendance goal for the next term should be designed.

Two NP grades results in the immediate initiation of dismissal proceedings from the PHPH Graduate Program.

ELECTIVE COURSES

A total of **two elective courses** from any program are required to be eligible for the degree. Students are strongly encouraged to complete the elective courses during their second year. Courses are listed in the course catalogue and graduate students are encouraged to speak to their mentor and/or graduate program director when considering other courses, as electives are subject to approval by the mentor and graduate director. The following are common electives taken by graduate students in PHPH.

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Some courses are offered every other year; TBA courses are offered when there is sufficient student interest.

PHPH 614: Neurophysiology and Pharmacology of Pain (2 credits, TBA) Course focused on functional organization of nociceptive pathways.

PHPH 619: Topics in Autonomic Physiology & Pharmacology (3 credits, TBA) This advanced topics course surveys the function and regulation of the autonomic nervous system, and the basis for autonomic drug actions. Topics can include autonomic control of cardiovascular function, energy balance, thermoregulation, respiration, and others.

PHPH 621: The Visual System (2 credits, Fall) This course alternates between Cellular and Developmental Biology of the Visual System in odd numbered years, and Neuroanatomy and Neurophysiology of the Visual System in even numbered years.

PHPH 622: Ion Channels and Genetic Diseases (2 credits, TBA) The course introduces the basic concepts of ion channel function in the context of the origin of inherited diseases and consider how alterations in channel function produce pathophysiological states, such as cystic fibrosis, myotonias and cardiac arrhythmia and the potential bases for therapeutics and directed drug development.

PHPH 630: Advanced Organic Synthesis (4 credits, Spring) This course deals with advanced organic synthesis methods and synthetic planning and execution strategies for complex target compound synthesis. The goal of the course is that students will emerge with a practical understanding of how to apply the tools of organic synthesis to their research.

Ph.D. Thesis Advisory Committee Guidelines

Within **three months** of passing the Ph.D. candidacy exam, the advisor and student must submit a suggested thesis advisory committee to the Graduate Program Director for approval. The following guidelines for the composition of the committee should be followed.

- A. The committee should include the advisor and at least 3 other faculty members who represent expertise relevant to the student's thesis project.
- B. All members of the advisory committee must be members of the OHSU Graduate Faculty.
- C. At least one member other than the advisor must be experienced in advising a Ph.D. thesis student; that is, he/she must have been a mentor for at least one student who has successfully completed their Ph.D.
- D. The student's mentor will not serve as the Chair of the committee. The responsibilities of the chair are:
 - a. To schedule and coordinate the meetings
 - b. To submit a completed Thesis Advisory Committee meeting summary to the GSC. Copies of the summary will be distributed to the student and the advisory committee members and the Chair of the Graduate Education Committee and a copy will be deposited in the student's file in the Department Office.
- E. The student must meet at least once per year with the Thesis Advisory Committee. Following completion of the third year, the student should meet more frequently (every six months) on the recommendation of his/her committee. One week prior to each committee meeting, the student should submit a summary of research accomplished and proposed to committee members. A copy should also be submitted to the Graduate Student Coordinator.

F. The Steering Committee will be responsible for monitoring adherence to these guidelines.

Preparation and Submission of Thesis:

- A. All instructions and guidelines adopted by the Graduate Council By-Laws shall be followed carefully.
- B. The formatting of the thesis should comply with the standards set out by the SOM graduate council:
<http://www.ohsu.edu/ohsuedu/academic/som/graduate/upload/Guidelines-8-2008-rev-4-2009.pdf>
- C. In addition, the Department of Physiology and Pharmacology requires the following actions in order for the student to present their dissertation:
 - 1. The student must meet with their Thesis Advisory Committee and receive permission from the entire committee to begin writing their thesis.
 - 2. The student will work with their mentor to write the thesis, and re-write as necessary, prior to the committee receiving the draft thesis.
 - 3. The Graduate Student Coordinator will complete a Request for Oral Thesis Examination Form and submit it to the PH2 Program Director for approval. The PH2 Program Director will then forward it on to the Associate Dean of Graduate Studies. The submission of this form to the Dean's Office must be at least four weeks prior to the date of the exam. It is recommended that at this time, the student submit a copy of their thesis to the Thesis Examination Committee. The student must submit their thesis no later than two weeks before the examination in order for the exam to take place as scheduled.
 - 4. The Thesis Advisory Committee will submit to the Graduate Student Coordinator a list of suggested members for the Thesis Examination Committee along with a suggestion for the Thesis Examination Chairperson. The Thesis Examination Committee should include at least one member who was not on the Thesis Advisory Committee, at least one member who is not a member of the PH2 Program, and at least one {two?} member who has a primary appointment in the Department of Physiology and Pharmacology.
 - 5. The Thesis Advisory Committee Members shall review the thesis prior to the defense and return it to the student with their comments and guidelines for revision. The comments should be returned to the student no later than the oral defense date. Some revision is normally required.
 - 6. After the post-defense corrections and required revisions have been made, the student will re-submit the thesis to their Thesis Advisory Committee for a final review process that is to be completed within two weeks of committee members receiving the thesis.
 - 7. All members of the Thesis Advisory Committee must sign the Thesis Approval Form.

MISCELLANEOUS

Grievances:

The procedure for handling grievances is outlined in the OHSU Graduate Studies Handbook.

Extracurricular employment:

The Department of Physiology and Pharmacology considers employment as a graduate student in the Ph.D. program to represent full time employment. Students are strongly discouraged from seeking outside employment. Any student wishing to pursue outside employment must submit a written request to the TAC advisor and/or mentor, the Director of Graduate Education, and the Chairman of

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Physiology and Pharmacology. The student must receive written authorization from the above individuals prior to accepting employment.

Masters Degree

The OHSU Department of Physiology and Pharmacology does not routinely offer a Masters degree. Under special circumstances, a student may petition the Graduate Steering Committee in writing to allow the student to complete a terminal Masters degree. Approval of this request by the Graduate Steering Committee must be unanimous. A written thesis and oral thesis defense examination are required to earn a Masters degree. A minimum of 80 completed credit hours is required for the Master's degree. A thesis advisory committee is required, the composition of which is in keeping with section IV C of these guidelines.