

DOCTOR OF PHILOSOPHY (PH.D.)

IMPORTANT Note About the Doctor of Philosophy in Physiology Degree
This program is no longer accepting students at this time as this field of study is now a discipline within the new Integrated Biomedical Sciences (IBMS) Program. All information in this section of the Catalog is for the current Physiology students only.

Physiology is the study of the structure, and function, and integration of the human body. In the pioneering days, research efforts were primarily directed at tissues and organs. This research continues to this day and has resulted in a comprehensive picture of the function of the human body. As molecular and genetic methods have come of age, physiologists have implemented these techniques to elucidate the molecular mechanisms that underlie physiological function. It is now clear that in order to develop a complete understanding of the normal and dysfunctional human body, we must ask questions at all levels, from the molecular to the cellular, to the organ, to the whole organism.

Graduate studies leading to a Doctor of Philosophy degree in the basic biomedical sciences are offered.

Physiology Degree Requirements

A minimum of 72 credit hours and a minimum overall GPA of 3.0 is required for the Ph.D. degree. In addition, all doctoral candidates must register for PHYL 7099 Dissertation for at least two semesters in order to graduate. The student is required to demonstrate intellectual command of the subject area of the graduate program and capability to carry out independent and original investigation in the area. The student must successfully defend a dissertation and be recommended by their program COGS for approval of their degree to the Dean of the Graduate School of Biomedical Sciences.

Physiology Track

First Year

Fall		Credit Hours
IBMS 5000	Fundamentals Of Biomedical Sciences	8
IBMS 5008	Lab Rotations	2
Total Credit Hours:		10.0

First Year

Spring		Credit Hours
IBMS 5008	Lab Rotations	2
PHYL 5041	Excitable Membranes	1
PHYL 5042	Cardiovascular Physiology	1
PHYL 5043	Respiratory & Renal Physiology	1
PHYL 5044	Metabolism/Hormones/GI System	1
Total Credit Hours:		6.0

Second Year

Fall		Credit Hours
PHYL 6091	Selected Topics Of Physiology	2
PHYL 6090	Seminar	1

PHYL 6097	Research	1-12
PATH 5021 or CSBL 5095		
Total Credit Hours:		4.0-15.0

Second Year

Spring		Credit Hours
INTD 6002	Ethics In Research	0.5
PHYL 6091	Selected Topics Of Physiology	2
PHYL 6090	Seminar	1
PHYL 6097	Research	1-12
Qualifying Exam (QE) proposal due prior to May 1st.		
Total Credit Hours:		4.5-15.5

Third Year

Fall		Credit Hours
PHYL 6090	Seminar	1
PHYL 7099	Dissertation	1-12
Total Credit Hours:		2.0-13.0

Third Year

Spring		Credit Hours
PHYL 6090	Seminar	1
PHYL 7099	Dissertation	1-12
Total Credit Hours:		2.0-13.0

Fourth Year

Fall		Credit Hours
PHYL 6090	Seminar	1
PHYL 7099	Dissertation	1-12
Total Credit Hours:		2.0-13.0

Fourth Year

Spring		Credit Hours
PHYL 6090	Seminar	1
PHYL 7099	Dissertation	1-12
Total Credit Hours:		2.0-13.0

Fifth Year

Fall		Credit Hours
PHYL 6090	Seminar	1
PHYL 7099	Dissertation	1-12
Total Credit Hours:		2.0-13.0

Fifth Year

Spring		Credit Hours
PHYL 6090	Seminar	1

PHYL 7099	Dissertation	1-12
Total Credit Hours:		2.0-13.0

5. The student will be able to effectively communicate in writing.

¹ Students may take the full course but are only required to take three out of the four modules (PHYL 5041 Excitable Membranes, PHYL 5042 Cardiovascular Physiology, PHYL 5043 Respiratory & Renal Physiology, PHYL 5044 Metabolism/Hormones/GI System).

Other courses – Selected Topics in Physiology or coursework as desired by mentor.

All students are required to submit a dissertation research proposal the Spring semester following passing the Qualifying Exam. Dissertation research proposal is to be presented during the PHYL 6090 Seminar Spring Student Seminar course.

Students are required to attend Monday Physiology Department Seminars/Special Seminars followed by student roundtable luncheon.

Note: MD/PhD students must meet the same requirements as all other students in the Physiology Track, with the exception of Fall I courses.

PHYL 6091 Selected Topics in Physiology

At least two courses selected from among the offerings in:¹

PHYL 6091-01: Cardiovascular

PHYL 6091-03: Cell Biology in Neural Science

PHYL 6091-04: Endocrine and Metabolism

PHYL 6091-05: Molecular Physiology

PHYL 6091-07: Ion Channels in Disease

Courses that may be substituted for one of these selections:

INTD 5040 Fundamentals Of Neuroscience1: Molecular, Cellular, & Developmental Neuroscience

INTD 5043 Fundamentals Of Neuroscience 2: Systems Neuroscience

INTD 5081 Topics In Cardiovascular Research

INTD 7002 Neurobiology Of Learning And Memory

CSBL 6058 Neurobiology Of Aging

CSBL 5023 Development

CSBL 5024 Genomics

CSBL 5026 Stem Cell Biology

¹ Not all selected topics are offered each semester, please discuss with Track Leader/Academic Coordinator for more details. Substituted courses will require approval from Track Leader/COGS.

Physiology Objectives/Program Outcomes

1. The student will be able to critically review and interpret research literature.
2. The student will be able to demonstrate proficient understanding of core physiological principles.
3. The student will be able to communicate effectively in verbal presentations.
4. The student will be able to demonstrate the ability to conduct independent research.