## Physiology (PHY)

**PHY 452/ANS 452/ANS 552/PHY 552 Comparative Reproductive Physiology and Biotechnology** (3 credit hours)

Comparative approach to examining aspects of reproductive physiology in selected vertebrate species. Detailed examination of current reproductive biotechnologies and ethical issues associated with the application of reproductive biotechnologies. Credit will not be given for both ANS 452 and ANS (PHY) 552.

Prerequisite: ANS 220
Typically offered in Fall only

**PHY 503 General Physiology I** (3 credit hours)

Physiology is the study of the how living systems function from the molecular to organismal level. As such, this course will build on your knowledge of anatomy, biochemistry, and cell biology and also presumes a working knowledge of the basics of college level physics and chemistry. Students will learn the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems of the human body and be able to integrate knowledge and concepts from various organ systems to explain function in the human body. In this course, we will address cellular, neural, muscular, and gastrointestinal physiology in humans.

P: BCH451 and BCH553 (or equivalents) and one year each of college-level physics and chemistry
Typically offered in Fall only

**PHY 504 General Physiology II** (3 credit hours)

Physiology is the study of the how living systems function from the molecular to organismal level. As such, this course will build on your knowledge of anatomy, biochemistry, and cell biology and also presumes a working knowledge of the basics of college level physics and chemistry. Students will learn the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems of the human body and be able to integrate knowledge and concepts from various organ systems to explain function in the human body. In this course, we will address cardiovascular, respiratory, and renal physiology in humans.

P: BCH451 and BCH553 (or equivalents) and one year each of college-level physics and chemistry
Typically offered in Spring only

**PHY 524/PO 524/ZO 524 Comparative Endocrinology** (3 credit hours)

Basic concepts of endocrinology, including functions of major endocrine glands involved in processes of growth, metabolism and reproduction.

Prerequisite: BIO 421 or PO 405
Typically offered in Spring only

**PHY 552 PHY 452/ANS 452/ANS 552 Comparative Reproductive Physiology and Biotechnology** (3 credit hours)

Comparative approach to examining aspects of reproductive physiology in selected vertebrate species. Detailed examination of current reproductive biotechnologies and ethical issues associated with the application of reproductive biotechnologies. Credit will not be given for both ANS 452 and ANS (PHY) 552.

Prerequisite: ANS 220
Typically offered in Fall only

**PHY 595 Special Topics in Physiology** (1-6 credit hours)

The study of special problems and selected topics of current interest in physiology and related fields.

Typically offered in Spring only

**PHY 601 Physiology Seminar** (1 credit hours)
Weekly seminars on topics of current interest given by resident faculty members, graduate students and visiting lecturers.

Prerequisite: Graduate standing
Typically offered in Spring only

**PHY 610 Special Topics In Physiology** (1-6 credit hours)

The study of special problems and selected topics of current interest in physiology and related fields.

Prerequisite: Graduate standing
Typically offered in Fall, Spring, and Summer

**PHY 620 Special Problems In Physiology** (1-6 credit hours)

Credits Arranged

Prerequisite: Graduate standing
Typically offered in Fall, Spring, and Summer

**PHY 685 Master's Supervised Teaching** (1-3 credit hours)

Teaching experience under the mentorship of faculty who assist the student in planning for the teaching assignment, observe and provide feedback to the student during the teaching assignment, and evaluate the student upon completion of the assignment.

Prerequisite: Master's student
Typically offered in Fall, Spring, and Summer

**PHY 690 Master's Examination** (1-9 credit hours)

For students in non thesis master's programs who have completed all other requirements of the degree except preparing for and taking the final master's exam.

Prerequisite: Master's student
Typically offered in Summer only

**PHY 693 Master's Supervised Research** (1-9 credit hours)

Instruction in research and research under the mentorship of a member of the Graduate Faculty.

Prerequisite: Master's student
Typically offered in Fall, Spring, and Summer

**PHY 695 Master's Thesis Research** (1-9 credit hours)

Thesis Research

Prerequisite: Master's student
Typically offered in Fall, Spring, and Summer

**PHY 696 Summer Thesis Research** (1 credit hours)

For graduate students whose programs of work specify no formal course work during a summer session and who will be devoting full time to thesis research.

Prerequisite: Master's student
Typically offered in Summer only
**PHY 699  Master’s Thesis Preparation** (1-9 credit hours)
For students who have completed all credit hour requirements and full-time enrollment for the master's degree and are writing and defending their thesis.

Prerequisite: Master's student
Typically offered in Fall, Spring, and Summer

**PHY 702/ANS 702  Reproductive Physiology of Mammals** (3 credit hours)
Survey of reproductive strategies among vertebrates; in-depth coverage of mammalian reproductive physiology; gametogenesis, fertilization, embryonic and fetal development, parturition, puberty, neuroendocrine control mechanisms in male and female mammals.

Prerequisite: ZO 421
Typically offered in Fall and Spring

**PHY 764/CBS 764/NTR 764  Advances in Gastrointestinal Pathophysiology** (3 credit hours)
This course will focus on advanced gastrointestinal physiology and the pathophysiology of diseases of relevance to scientists involved in animal-related research. In particular, the course will cover the pathophysiology of ulceration, infectious diarrhea, ischemia, motility disorders, and inflammatory diseases of the gut. An in-depth review paper will be required based on recent literature regarding a specific gastrointestinal disease.

Prerequisite: PHY 503, PHY 504
Typically offered in Fall only

**PHY 780/ANS 780  Mammalian Endocrinology** (3 credit hours)
Mammalian endocrine system with emphasis on ontogeny and anatomy of key organs; synthesis and action of hormones. Role of hormones in regulation of physiological processes such as metabolism, exocrine function, digestion, ion balance, behavior, lactation, growth and reproduction.

Prerequisite: BCH 451, ZO 421

**PHY 795  Special Topics in Physiology** (1-9 credit hours)
The study of special problems and selected topics of current interest in physiology and related fields.

Typically offered in Fall and Spring

**PHY 801  Physiology Seminar** (1 credit hours)
Weekly seminars on topics of current interest given by resident faculty members, graduate students and visiting lecturers.

Prerequisite: Graduate standing
Typically offered in Spring only

**PHY 810  Special Topics In Physiology** (1-4 credit hours)
The study of special problems and selected topics of current interest in physiology and related fields.

Prerequisite: Graduate standing
Typically offered in Fall and Spring

**PHY 820  Special Problems In Physiology** (1-6 credit hours)
Credits Arranged

Prerequisite: Graduate standing
Typically offered in Fall and Spring

**PHY 885  Doctoral Supervised Teaching** (1-3 credit hours)
Teaching experience under the mentorship of faculty who assist the student in planning for the teaching assignment, observe and provide feedback to the student during the teaching assignment, and evaluate the student upon completion of the assignment.

Prerequisite: Doctoral student
Typically offered in Summer only

**PHY 890  Doctoral Preliminary Examination** (1-9 credit hours)
For students who are preparing for and taking written and/or oral preliminary exams.

Prerequisite: Doctoral student
Typically offered in Fall, Spring, and Summer

**PHY 893  Doctoral Supervised Research** (1-9 credit hours)
Instruction in research and research under the mentorship of a member of the Graduate Faculty.

Prerequisite: Doctoral student
Typically offered in Fall, Spring, and Summer

**PHY 895  Doctoral Dissertation Research** (1-9 credit hours)
Dissertation Research

Prerequisite: Doctoral student
Typically offered in Fall, Spring, and Summer

**PHY 896  Summer Dissertation Research** (1 credit hours)
For graduate students whose programs of work specify no formal course work during a summer session and who will be devoting full time to thesis research.

Prerequisite: Doctoral student
Typically offered in Summer only

**PHY 899  Doctoral Dissertation Preparation** (1-9 credit hours)
For students who have completed all credit hour requirements, full-time enrollment, preliminary examination, and residency requirements for the doctoral degree, and are writing and defending their dissertations.

Prerequisite: Doctoral student
Typically offered in Fall, Spring, and Summer