<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tr>
<td>PHYSIOL 335 — PHYSIOLOGY</td>
<td>5 credits.</td>
<td>Lectures, recitations, demonstrations, and labs. Not open to Fr</td>
<td>Biolg or zool gen chem before enroll.</td>
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<tr>
<td>PHYSIOL 435 — FUNDAMENTALS OF HUMAN PHYSIOLOGY</td>
<td>5 credits.</td>
<td>An advanced human physiology course that explores the major organ systems. The main learning objective is an understanding of the mechanisms through which homeostasis is integrated and maintained. The class includes weekly: three lectures, one discussion, and one inquiry-based laboratory period. Zoo 102, 151, 152, or Biocore 303/383 required. CHEM 103, 104, 109, or 115 required. PHYSICS 103, 104, 201, 202, 207, or 208 required.</td>
<td>Junior standing or higher required.</td>
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<tr>
<td>PHYSIOL/NTP/PSYCH/ZOOLOGY 524 — NEUROBIOLOGY II: AN INTRODUCTION TO THE BRAIN AND BEHAVIOR</td>
<td>3 credits.</td>
<td>An introduction to studies of the human nervous system covering neuroanatomy of the brain, neuronal coding, sensory and motor systems, biological rhythms, arousal, attention, physiological regulation, reward, aversion, learning and memory.</td>
<td>Zool 523, equiv crse in physiol, or cons inst</td>
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<td>PHYSIOL 533 — MOLECULAR PHYSIOLOGY</td>
<td>2 credits.</td>
<td>This course will introduce functional aspects of mammalian organ systems from a molecular perspective. Human diseases will receive a special emphasis, and diseases will be used to illustrate the connection between molecules and biological function. Recommended but not required: Biocore 323, biochem (e.g. BIOCHEM 507 508), cell biology (e.g. ZOOLOGY 570)</td>
<td>CHEM 103 104 or 109 or 115 116; PHYSICS 201 202 or 207 208; ZOOLOGY/BIOLOGY/BOTANY 151 152 or Biocore 303 304; MATH 221 222 or 275 276.</td>
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<tr>
<td>PHYSIOL/NTP/PHMCOL-M 610 — CELLULAR AND MOLECULAR NEUROSCIENCE</td>
<td>4 credits.</td>
<td>Study of original papers leading to an understanding of the molecular basis of electrical activity in neurons. Topics include voltage-sensitive currents, molecular biology of neuronal receptors, synaptic transmission and sensory transduction. Lectures supplemented with experimental demonstrations and discussion sessions.</td>
<td>Zool 523 or equiv</td>
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<tr>
<td>PHYSIOL/ANATOMY/NTP/PHMCOL-M/PSYCH 611 — SYSTEMS NEUROSCIENCE</td>
<td>4 credits.</td>
<td>Introduction to the anatomy and physiology of the mammalian nervous system. Lectures will cover the neuroanatomy of the major subdivisions of the human brain, the major sensory and motor systems, and higher order functions. Lab/discussion sections will emphasize readings from the primary literature and hands-on dissections.</td>
<td>PHYSIOL/NTP/PHMCOL-M 610</td>
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Requisites: CHEM 103, 104, 109, or 115; PHYSICS 103, 104, 201, 202, 207, or 208; ZOOLOGY/BIOLOGY/BOTANY 151, 152, or Biocore 303, 304; MATH 221, 222, or 275, 276.

Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: No

Last Taught: Fall 2017
PHYSIOL/NEURODPT/NTP/ZOOLOGY 616 — LAB COURSE IN NEUROBIOLOGY AND BEHAVIOR
4 credits.

Students will do three independent experimental modules exploring neurophysiology and behavior, each taking 4-5 weeks. Students will work in groups of 2 or 3 and will learn techniques and then develop their own short investigations into each of three separate areas of neurobiology. There will be continual interaction between students and faculty.

Requisites: ZOOLOGY/NTP/PSYCH/ZOOLOGY 523 and NTP/PHYSIO/PSYCH/ZOOLOGY/NTP/PHYS/PHMCOL-M/PHYSIOL/NTP/PHMCOL-M 610 and ANATOMY/NTP/PHMCOL-M/PHYSIOL/PSYCH/ANATOMY/NTP/PHMCOL-M/PHYSIOL 611

Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

PHYSIOL/ANATOMY/NTP 625 — BRAIN CELL CULTURES AND IMAGING: A LAB COURSE
4 credits.

Hands-on laboratory training in neuronal cell culture, live and fixed neuron labeling and microscopy techniques to visualize neurons in culture, as well as image analysis methods. Enrollment limited to 12 students, authorized by cons inst
Requisites: Intro crses in biochem, cell biology anatomy.
Course Designation: L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2013

PHYSIOL/NTP 629 — MOLECULAR AND CELLULAR MECHANISMS OF MEMORY
3 credits.

Course will focus on the cell signaling and the resulting structural changes that occur at neuronal synapses during memory formation. The aim is to understand how the synaptic changes underlying memory occur.
Requisites: Crse in cellular neurosci (Neurosci 523 or equiv);
BIOCHEM 501 or equiv
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

PHYSIOL/ANATOMY/NTP 630 — NEURONAL MECHANISMS FOR SENSATION AND MEMORY IN CEREBRAL CORTEX
3 credits.

Current literature will be considered in lectures and discussions that provides insight into how the cerebral cortex processes sensory information to generate and store cogent representations of the external world. The course includes laboratory exercises and demonstrations.
Requisites: Intro neurosci crse highly recommended: Neurosci/Anat/Phmcol/PHYSIOL/ANATOMY/NTP/PHMCOL-M/PSYCH 611, MED SC-M 731, COMP BIO 505, Zool/Neurosci/PSYCH/ZOOLOGY 523, Psych/Neurophy/Neurosci/Zool 524; or cons inst
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

PHYSIOL 675 — SELECTED TOPICS IN PHYSIOLOGY
1-3 credits.

Each topic taught once every two years: advanced cardiovascular physiology, advanced respiratory physiology, advanced endocrinology, membrane transport physiology and neurobiology.
Requisites: Cons inst
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

PHYSIOL 699 — INDEPENDENT WORK
1-4 credits.

Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

PHYSIOL/NTP 700 — PROFESSIONAL DEVELOPMENT FOR BIOMEDICAL GRADUATE STUDENTS
1 credit.

Provides graduate students with the skills and knowledge necessary to succeed in science. Topics which are covered include choosing a thesis advisor, grant writing, preparing a seminar presentation, etc.
Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017
PHYSIOL 720 — PRINCIPLES OF HUMAN PHYSIOLOGY
4 credits.
A basic science of medicine course serving as an introduction to physiology of the autonomic nervous system, cardiovascular system, respiratory system, digestive tract, renal and endocrine systems. Includes lectures, demonstrations, and lab.
Requisites: 1st yr Med stdt or Grad stdt with cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016

PHYSIOL/AN SCI/ANATOMY 725 — MUSCLE BIOLOGY
2 credits.
Anatomy, physiology, and biochemistry of muscle.
Requisites: Crse in biochem or biomolecular chem physiol or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2012

PHYSIOL/KINES 773 — CARDIORESPIRATORY ADAPTIONS TO ENVIRONMENT AND EXERCISE
3 credits.
Examination of the effects of acute and chronic exercise and exposure to hypo- and hyperbaric environments on physiological responses; mechanisms underlying these responses.
Requisites: PHYSIOL 720 or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2017

PHYSIOL 799 — INDEPENDENT READING
1-4 credits.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 1989

PHYSIOL 901 — SEMINAR
1 credit.
Requisites: A course in animal physiology
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017

PHYSIOL 990 — RESEARCH
1-9 credits.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2017