999. Research  
Fall, Winter, Spring. Variable credit.  
M.S. degree in biological science or equivalent.  
Research in some phase of biological science,  
data to form the basis for the thesis required  
for the doctoral degree in biological science.  

BIOMECHANICS*  
BIM  
College of Osteopathic Medicine  

580. Introduction to Athletic Medicine  
Fall, Winter. 3(3-2) Approval of department.  
Health care of student athlete. Examination and  
evaluation of physical training sequences for  
high school athletes. Analyze functional role  
of muscular-skeletal systems; illustrated in various  
high school sports.  

581. Health Care Delivery For Athletes  
Fall, Spring. 3(3-0) Bachelor's degree  
and involvement in secondary school athletics.  
Physical training—the role of the athletic trainer  
in health care delivery. Emphasizes all  
interscholastic sports. Injury prevention and  
treatment rehabilitation stressed.  

620. Directed Studies  
Fall, Winter, Spring, Summer. 1 to 6 credits.  
May re-enroll for a maximum of 24 credits.  
Approval of department.  

865. Advanced Neurobiology  
Winter of odd-numbered years. 3(3-0)  
BYP 825. Interdepartmental with the Depart­  
ments of Biophysics, Physiology, Psychology and  
Zoology.  

Basic organization, structure and function of  
nervous and motoric systems including examples  
from invertebrates and vertebrates.  

880. Special Topics in Biophysics  
Fall, Winter, Spring, Summer. 2 to 4 credits.  
Approval of department; 402 recom­  
mended.  

Special topics within five areas of biophysics:  
structure-function correlation, neurophysiology,  
membrane biophysics, molecular biophysics, or  
theoretical biophysics.  

899. Independent Study  
Fall, Winter, Spring, Summer. 1 to 5 credits.  
May re-enroll for a maximum of 15 credits.  
Approval of department.  

Undergraduate research under one of our  
faculty.  

921. Molecular Biophysics  
Fall of odd-numbered years. 3(3-4)  
Approval of department.  
Theoretical/experimental methods for determi­  
nation of electronic structure, excited states  
and spectroscopy of biological systems.  
Biological energy transfer. Quantum processes in  
photosynthesis. Exciton effects in photo­  
ceptors and pigments. Conformational changes.  

822. Charge Transport and Solid State Processes  
Winter of even-numbered years. 4(3-2)  
Approval of department.  

Fundamental electrical properties, dielectric  
properties and photoconductivity effects and  
their relevance to the biological functioning  
of these molecules.  

823. Radiation Biophysics  
Spring of even-numbered years. 3(3-2)  
Approval of department.  
Effects of various types of ionizing radiation  
and ultraviolet and visible light on proteins,  
nucleic acids, viruses and plant and animal  
cells. Damage and repair mechanisms at the  
molecular level.  

824. Membrane Biophysics  
Fall of even-numbered years. 4(3-2)  
Approval of department.  

Membrane Biophysics will cover interfascial  
phenomena in biology and chemistry, structure  
and function, theoretical and experimental  
models for biological membranes; membrane biochemis­  
try. Labs will emphasize biomolecular lipid  
membrane (BLM) techniques.  

825. Basic Neurobiology  
Winter of odd-numbered years. 4(3-2)  
Approval of department.  

A comparative survey of fundamental principles  
of nervous organization will be undertaken in  
lectures. Laboratory will emphasize examina­  
tion of prepared nervous material and  
a demonstration of important neurophysiological  
phenomena.  

826. Cellular Biophysics  
Spring. 4(3-2) Approval of department.  

Basic cell structure and function at the molecular  
level. Emphasis will be on genetic and  
molecular controls of cellular systems.  

834. Membranes: Natural and Artificial  

885. Interdepartmental with the Depart­  
ments of Biomechanics, Physiology, Psychology and  
Zoology administered by the Department of  
Biomechanics.  

Basic organization, structure and function of  
nervous systems comprising sensory, motor, and  
autonomic systems including examples from in­  
vertebrates and vertebrates.  

890. Special Topics in Biophysics  
Fall, Winter, Spring. Variable credit.  
May re-enroll for a maximum of 15 credits.  

Special topics within the five subdivisions of  
biophysics: structure, organization and function  
of biological phenomena, sensory perception,  
and psychophysics and biomechanics.  

885. Vertebrate Neural Systems I  
Fall of odd-numbered years. 5(3-4)  
Approval of departments; ANT 815 and BYP  
825 recommended. Interdepartmental with the  
Zoology, Physiology and Psychology Depart­  
ments and administered by the Psychology  
Department.  

Structure and function of major component  
systems of vertebrate brains, their evolution,  
ontogeny and comparative analysis in mammals,  
birds, reptiles, amphibians and fish. Interrela­  
tion of behavioral, anatomical and physiological  
structures.  

886. Vertebrate Neural Systems II  
Winter of even-numbered years. 5(3-4)  
BYP 885. Interdepartmental with the Psychol­  
ogy, Physiology and Zoology Departments and  
administered by the Zoology Department.  

Continuation of 885. Major component systems  
of vertebrate brains, their evolution, ontogeny,  
and comparative analysis in mammals, birds,  
reptiles, amphibians and fish. Interrelation of  
behavioral, anatomical, and physiological  
structures.  

899. Research  
Fall, Winter, Spring. Variable credit.  
Approval of department.  

Reading course in special topics adapted to the  
individual preparation and needs of the student.  

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