

Academic Track in the Biological Science Major

PRE-PROFESSIONAL HEALTH SCIENCES

Students following this academic track are preparing for entrance into professional or allied health science schools, including medicine, veterinary medicine, optometry, dentistry, pharmacy, physical therapy, and physician's assistant. Advising for the pre-professional and allied health sciences is available in the **Health Professions Advising Office, 408 College of Medicine (850-644-7678)**. The required courses for the biological science major meet *most* of the course requirements for admission to the various health professional schools. The Health Professions Advising Office offers academic advising, schedule planning, information about health science schools and required entrance exams, and assistance in the application process for admission to health professional schools. The programs and courses required for admission are outlined in Table 1 below.

CURRICULUM: For most of the pre-professional health sciences, Genetics (PCB 3063) should be taken as early as possible following completion of the major prerequisite courses. Students who hope to conduct medical research are strongly encouraged to take a Directed Individual Study (BSC 4900) or Research Methods (BSC 4933) course. Lists of recommended elective courses offered by the department that are applicable to each professional or allied health science school are listed in Table 1 on the next page. Students should determine which elective courses to take based on educational interests and career goals. Students interested in the health professions are encouraged to complete key courses such as BSC 2010/L, BSC 2011/L, CHM 1045/L, CHM 1046/L, CHM 2210, CHM 2211/L, PHY 2048C/2049C or PHY 2053C/2054C, PCB 3063, and anatomy and physiology (see Table 1 for which courses are required for admission to each program) *prior* to taking entrance examinations.

FACULTY: Undergraduate teaching and guidance is a large part of the commitment of our regular faculty in Biological Science. Our faculty value interaction and discussion with students and encourage individual discussion and research projects. The following faculty have expertise in health science related areas:

Donald Caspar	Structural biology; virus assembly; protein adaptability
John Elam	Nerve cell maintenance and regeneration
Ross Ellington	Comparative physiology and biochemistry
Lloyd Epstein	Eukaryotic molecular genetics; RNA processing; catalytic DNA
Debra Fadool	Olfactory signal transduction; ion channel structure and function; neuromodulation
James Fadool	Developmental biology; cellular and genetic analysis of visual system development
Piotr Fajer	Molecular mechanisms of muscle contraction and calcium signaling
Marc Freeman	Neuroendocrine regulation of reproduction
Betty Jean Gaffney	Structural biology; enzyme structure
Thomas Houpt	Molecular neurobiology of learning and memory of food intake
Laura Keller	Molecular genetics; signal transduction and gene regulation
Thomas Keller	Cell and molecular biology of the cytoskeleton
Michael Meredith	Sensory physiology (olfaction); computer modeling of brain circuits
Timothy Moerland	Muscle physiology and biochemistry
David Quadagno	Hormonal control of behavior
Robert Reeves	Bacterial and phage genetics; RNA structure and expression
Thomas Roberts	Cell biology; cell motility
Kenneth Roux	Molecular immunology; immunogenetics; immunochemistry
Kenneth Taylor	Macromolecular structure of proteins; 3-D Electron Microscopy
Paul Trombley	Synaptic physiology and plasticity; ion channel modulation

FACILITIES: The research facilities available within the Department of Biological Science allow for the performance of virtually any experiment in the health sciences. The department maintains a DNA sequencing laboratory; monoclonal antibody production laboratory; microscopy laboratory with transmission and scanning electron microscopes, confocal microscope, and fluorescence microscope; analytical biochemistry laboratory with HPLC's, gel scanning densitometers, ultracentrifuges, and PCR equipment; computerized molecular modeling and gene data base facility; and DNA synthesis and protein sequencing facilities (available through a cooperative liaison with the Department of Chemistry). The staff of the Laboratory Animal Resources (LAR) maintains vertebrate animals. Some faculty also conduct marine animal research at the FSU Marine Laboratory.

**Table 1-Summary of Professional and Allied Health Science Schools: Courses Required
For Admission and Additional Recommended Preparatory Biological Science Elective Courses***

Program	Courses Required for Admission	Recommended Preparatory Biological Science Elective Courses
Medicine (Including Osteopathic, Chiropractic and the FSU College of Medicine (COM))	BSC 2010/L and BSC 2011/L PCB 3063 and PSY 2012 are both strongly recommended CHM 1045C, CHM 1046C, CHM 2210, and CHM 2211/L Some schools and FSU COM require BCH 4053 and BCH 4054 PHY 2053C and PHY 2054C or PHY 2048C and PHY 2049C	MCB 4403/L, PCB 3134, PCB 3743, PCB 4024/L, PCB 4233/L, PCB 4731L, ZOO 3713C, ZOO 4232/L, ZOO 4753C
Veterinary Medicine	BSC 2010/L and BSC 2011/L PCB 3063 and MCB 4403/L Animal Science (ANS 3006) and Animal Nutrition (ANS 4445) ** CHM 1045C, CHM 1046C, CHM 2210, and CHM 2211/L BCH 4053 PHY 2053C and PHY 2054C or PHY 2048C and PHY 2049C MAC 2311 STA 2122	PCB 3134, PCB 3743, PCB 4024/L, PCB 4253/L, PCB 4723, PCB 4731L, ZOO 4513, ZOO 4753C
Optometry	BSC 2010/L and BSC 2011/L CHM 1045C, CHM 1046C, CHM 2210, and CHM 2211/L Either BCH 3023C or BCH 4053 (Requirement varies by school; see FSU COM) PHY 2053C and PHY 2054C or PHY 2048C and PHY 2049C MAC 2311	MCB 4403/L, PCB 3134, PCB 3743, PCB 4843, ZOO 3713C, ZOO 4753C
Dentistry	BSC 2010/L and BSC 2011/L PCB 3063 <u>or</u> PCB 4024 MCB 4403/L Developmental Psychology (DEP 2004) *** CHM 1045C, CHM 1046C, CHM 2210, and CHM 2211/L BCH 4053/L PHY 2053C and PHY 2054C or PHY 2048C and PHY 2049C	MCB 4403/L, PCB 3134, PCB 3743, PCB 4024/L, PCB 4233/L, ZOO 3713C, ZOO 4753C, STA 2122, a Logic Course
Pharmacy	BSC 2010/L and BSC 2011/L BSC 2085/2086 + labs or PET 3301/3302 + labs Public Speaking Course (see Oral Competency Requirements for FSU) Economics of the National Economy (ECO 2013) or Economics of the Price System (ECO 2023) CHM 1045C, CHM 1046C, CHM 2210, and CHM 2211/L PHY 2053C and PHY 2054C or PHY 2048C and PHY 2049C Some schools require MAC 2311	BOT 3800, MCB 4403/L, PCB 3134, PCB 3743, PCB 4024/L, PCB 4233/L
Physical Therapy	BSC 2010/L and BSC 2011/L PET 3301/3302 + labs PSY 2012 CHM 1045C, CHM 1046C, CHM 2210, and CHM 2211 PHY 2053C and PHY 2054C or PHY 2048C and PHY 2049C	ZOO 3713C
Physician's Assistant	BSC 2010/L and BSC 2011/L BSC 2085/2086 + labs or PET 3301/3302 + labs MCB 2004/L Medical Terminology (NUR 3090) CHM 1045C and CHM 1046C STA 2122	

* Refers to admissions requirements for professional and allied health science schools located in the state of Florida. The Health Professions Advising Office can provide admissions requirements for out-of-state professional and allied health science schools.

** ANS 3006 and ANS 4445 are offered at FAMU and UF. Only 6 of the 8 hours are accepted as credit for the biological science major.

*** DEP 2004 is offered at Tallahassee Community College.