

**Master Syllabus**  
**PSB 3002 Biological Bases of Behavior I**  
 Department of Psychology  
 Florida Atlantic University, Boca Raton, FL

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**Course Prerequisites and/or Corequisites (if any)**

PSY 1012 General Psychology; It is **strongly recommended** that students complete an introductory biology course, such as BSC 2085 (Anatomy and Physiology I) or BSC 1010C (General Biology I), prior to enrollment in this course. Students who have not taken introductory biology courses may have difficulty with course material, because much of the course content builds on fundamental biological and chemical principles. Students who have not taken the above course(s), or their equivalent, should ***carefully examine the textbook*** to determine whether or not they are adequately prepared for this course.

**Course Lecture-Lab-Credit and/or Contact Hours**

Lecture Course, 3 credit hours

**Includes Lab?** \_\_\_ Yes  X  No

**Lab Fee?** \_\_\_ Yes  X  No

**Special Facility or Equipment Needs**

No specified facility or special equipment required; textbooks and other student materials to be specified by instructor.

**Recommendations for Teaching Assistants**

There is typically one TA for each section of the course.

**Course Objectives**

This course is intended to present the basic principles of psychobiology to undergraduate psychology majors. The course emphasizes neural histology and ultrastructure, neural physiology, neuroanatomy of the central and peripheral nervous system, a brief survey of chemical neuroanatomy (neurotransmitter systems), and "systems integration", which includes an analysis of sensory and motor systems. This course is intended to prepare students for other psychobiology courses at FAU, as well as the psychology/physiological psychology specialization of the GRE exam (for students intending to enter psychology graduate school).

**Course Outline of Topics (Sequence & specifics may vary by instructor)**

- I. Introduction: Class Policies/Procedures
- II. Structure and Functions of Cells in the Nervous System
- III. The Membrane Potential
- IV. The Action Potential

- V. The Synaptic Potential
- VI. Neurotransmitters and Neuromodulators
- VII. Central Nervous System
- VIII. The Spinal Cord
- IX. The Autonomic Nervous System
- X. Touch, Hearing, Taste, Smell
- XI. Vision

**Course Learning Objectives**

Students will demonstrate an understanding of the following concepts through their performance on course examinations:

1. Histology and cell biology of neurons and glia
2. Ionic bases of resting membrane potential
3. Ionic bases of action potential. Cable properties, summation properties, and threshold for action potential
4. Synaptology and ionic bases of presynaptic exocytosis; Ionic bases of postsynaptic potentials.
5. Chemical / electrical neurotransmission; Survey of chemically-gated channels. Introduction to psychopharmacology.
6. Introductory anatomy of brain, cranial nerves, and spinal cord. Basic functional / clinical neuroanatomy.
7. Visceral (autonomic) nervous system.
8. Visual transduction; physiology, neuroanatomy, psychophysics.
9. Sensory transduction; Touch, Hearing, Taste, Smell: Neuroanatomy, physiology, psychophysics of senses.
10. (Somatic) Motor system: Physiology of NMJ; spinal reflexes and central control of movement. Basic clinical disorders / pathology.