Administrative Unit: History and Social Sciences Department

Course Prefix and Number: BIOL 371

Course Title: Neuroscience

Number of Credit Hours: 3  Lecture Hours: 3  Laboratory Hours: 0

Catalog Description: Comprehensive survey of the physiological processes and structures underlying human and animal behavior, including sensation, movement, emotion, learning, memory, sleep, drugs, and abnormal behavior. Cross-listed as PSYC 371. Prerequisites: 6 hours of PSYC courses or 6 hours of BIOL courses. Offered even Spring.

Prerequisite(s)/Corequisite(s): 6 hours of PSYC courses or 6 hours of BIOL courses

Text(s): The following are examples of possible texts that can be used:


Course Objectives:

- To identify, define, and explain the physiological correlates of behavior and mental processes.
- To produce a paper(s) in APA format and style.
- To identify major brain areas and functions.

Measurable Learning Outcomes

- Describe the background/history of neuroscience.
- Identify the cells of the nervous system and their functions.
- Describe how cells communicate (e.g. action potential, synaptic communication).
- Identify structures and functions of the nervous system, including those for the major subdivisions (e.g. ANS), brain areas (e.g. hippocampus), and systems (e.g. mesolimbic system).
- Perform brain dissections (Gross Anatomy) (can be virtual dissections).
- Describe the biochemistry of neurotransmitters.
- Describe how psychopharmaceuticals affect neurotransmission, mental processes and behavior.
- Explain in vivo and in vitro technology used in neuroscience.
- Explain the concepts and processes associated with at least 7 of the following topics:
Topical Outline (major areas of coverage):

- Vision
- Auditory, vestibular, somatic and chemical senses
- Movement
- Sleep and biological rhythms
- Reproductive behavior
- Emotions
- Ingestive behavior
- Learning and memory
- Human communication
- Neurological disorders
- Mental disorders

Recommended maximum class size for this course: 24

Library Resources: Online databases are available at http://www.ccis.edu/offices/library/resources.asp. You may access them from off-campus using your eServices login and password when prompted.

Prepared by: Cheryl-Ann Hardy, Ph.D.
Name ____________________________ Signature ____________________________

Date: September 21, 2005

NOTE: The intention of the master syllabus is to provide an outline of the contents of this course, as specified by the faculty of Columbia College, regardless of who teaches the course, when it is taught or where it is taught. Faculty members teaching this course for Columbia College are expected to facilitate learning pursuant to the course objectives and cover the subjects listed in the topical outline. However, instructors are also encouraged to cover additional topics of interest so long as those topics are relevant to the course’s subject. The master syllabus is, therefore, prescriptive in nature but also allows for a diversity of individual approaches to course material.

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