

# Introduction to Biological Psychology (PSY229) / Neuroscience (NEU200)

## Fall, 2009 Syllabus, CEDAR CREST COLLEGE

**Instructor:** Dr. Michael Finley, Sci Ctr 119, mffinley@cedarcrest.edu

**Time, place:** Tuesday, 7:00 – 9:30 pm (3 credits), Science Center 136  
Office Hours: Tuesdays, 6:30 pm – 6:55 PM or by appointment

**Prerequisites:** PSY 100 or permission of the instructor

**Required texts/equipment:** Neuroscience: Exploring the Brain (3rd ed), Bear et al. 2007; Lippincott, Williams & Wilkins.  
Clicker (ResponseCard) compatible with TurningPoint Technology software.

### Course Schedule

Date	Tests	Topic	Reading	Assignments and Important Dates
Aug 25		Introduction Neurons and Glia	Ch 1, pp 4-21; Ch 2, pp24-49	First article provided
Sept 1		Structure of the nervous system; Wiring the brain—neurodevelopment	Ch 7; Ch23	First article discussion
Sept 8	<b>TEST 1</b>	Language	Ch 20	
Sept 15		Emotion	Ch 18	
Sept 22	<b>TEST 2</b>	Neuronal membrane at rest	Ch 3, 52-73	Second article provided
Sept 29		Action Potential	Ch 4, 76-100	
Oct 6		Synaptic Transmission and Neurotransmitters	Ch 5, 102-132 Ch 6, 134-166	Second article discussion
Oct 20	<b>TEST 3</b>	Somatosensory system and pain	Ch 12, 388-410	
Oct 27		Spinal and brain control of movement	Ch 13 and Ch14	Third article provided
Nov 3	<b>TEST 4</b>	Chemical control and Motivation	Ch 15 and Ch 16	
Nov 10		Circadian Rhythms Brainwaves and Sleep	Ch 19	Third article discussion
Nov 17		Sex and the Brain	Ch 17	Fourth article provided
Nov 24	<b>TEST 5</b>	Memory systems	Ch 24 and 25	
Dec 1		Mental Illness/Neuropathology Course Wrap-up and review	Ch 22	Fourth article discussion
Dec 8		<b>To be determined</b>		

**Final Exam: Tuesday, Dec 15, 7 – 9:30pm, room to be determined.**

### Course Description

This course is an introduction to the exciting field of neuroscience, which lies at the intersection of biological and psychological science. This broad overview will address topics ranging from the cellular function of neurons to issues of language, cognition and mental illness.

## Objectives

- Learn the fundamental principles of the anatomy, development, and physiology of the nervous system
- Understand the structure and function of brain systems, including motor and neuroendocrine systems
- Understand neurochemical influences on behavior and sex differences in the brain
- Understand the neural basis of cognitive functions, including language and memory
- Understand several forms of psychiatric and neurological illness
- Learn to interpret experimental approaches and data in neuroscience

## Course Outcomes

Upon successful completion of the course, students will:

- Demonstrate the ability to engage in scientific and quantitative reasoning by interpreting and applying the concepts of nervous system function
- Demonstrate the ability to communicate these concepts

## Assessment

The outcomes described above will be assessed through:

- Written exams, quizzes, and assignments: scientific / quantitative reasoning, written communication ability
- Discussion and class participation: scientific / quantitative reasoning, oral communication ability, information literacy

## Student Responsibilities

**Readings:** Except for the first week's reading, assigned text readings should be read BEFORE class. Weekly quizzes are intended to encourage this practice. Additional required reading material, including articles for Writing Assignments (see below), will be provided by the instructor.

**Attendance:** It is **required** that you attend class. Given the structure of the class (one lecture per week), a large amount of material is covered in each session, and material may be covered that is not in your text. In addition, there are quizzes almost every week (see below). You are responsible for class material even if you are absent. (NOTES WILL NOT BE PROVIDED BY THE INSTRUCTOR.) If you miss an exam due to illness or emergency **documented** by the Dean of Students, you must contact the instructor as soon as possible to arrange a make-up exam. Make-up exams will not be given for any other reason. Quizzes cannot be made up, and a missed quiz will count for zero points.

Only registered students may attend and participate in the course. In rare circumstances, a guest of a registered student may attend a lecture, but only with **prior permission** from the instructor and only if the guest maintains respect for other students and the learning environment.

**Classroom protocol:** The Honor Code states, "Appropriate classroom behavior is implicit in the Cedar Crest Honor Code. Such behavior is defined and guided by complete protection for the rights of all students and faculty to a courteous, respectful classroom environment. That environment is free from distractions such as late arrivals, early departures, inappropriate conversations and any other behaviors that might disrupt instruction and/or compromise students' access to their Cedar Crest College education."

**Scholarship and Integrity:** I fully support the Cedar Crest College Honor Code and the Classroom Protocol code as stated in the Customs Book. You are required to abide by the accepted practices of scholarship and integrity. All writing and other material that you submit must be your own, original work, unless otherwise acknowledged.

- Material that is quoted from another source must be clearly indicated as a quotation and must be followed immediately by a citation to the original source.
- Paraphrasing should be avoided; changing a few words in someone else's writing does not make it your own work.

Cheating or plagiarism will result in a grade of F for the assignment or the course, at the instructor's discretion. If you have any questions about these issues, please discuss them with the instructor.

**Students with Disabilities:** Students with documented disabilities who may need academic accommodations should discuss these needs with their professors during the first two weeks of class. Students with disabilities who wish to request accommodations should contact the Advising Center.

## Assignments and Evaluation

**Quizzes, 15%:** There will be ~6 brief quizzes (2-3 questions, 5-10 minutes) which will be based on the reading assigned. The lowest quiz grade will be dropped (this will include a quiz missed due to absence or late arrival). Quizzes may be given at various times during the lecture period and some will require **clickers**, so please bring them to every class lecture.

**Tests, 60% total:** Five tests (12% each) will cover reading and lecture material prior to the test date. Each test will last about 30-45 min. The remaining class time on exam days will be devoted to lecture material.

**Final exam (20%)** will be comprehensive. **Your obligations for this course include attendance at the final exam, on the day and time scheduled by the Registrar's Office (To be determined). You should not make travel arrangements that conflict with the scheduled exam time.**

**Scientific articles/Discussion:** Four articles will be assigned for extra reading. Each article will touch on topics discussed in the lecture material but will come from popular scientific journals (such as Scientific American). A questionnaire will accompany the article. The questionnaire will help to focus on some of the key points in the article that relate to the lecture material. At indicated days in the syllabus, the articles will be discussed in the classroom. Your participation in these discussions will affect the "Participation" part of your final grade AND the material from the article and related discussion will be "testable" (i.e. questions about the articles may appear in Tests and/or Quizzes). The article will be provided by the instructor in advance of the discussion (see syllabus).

**Participation (5%):** Class participation in both the scheduled article discussions (see above) and spontaneous classroom Q and A will contribute towards your participation grade. Implicit in this grade is an expectation to "show up" (i.e. leaving class early or falling asleep will not count favorably towards this grade ☺). Adherence to the classroom protocol (e.g. being polite to fellow students and not disrupting classroom activities) will count favorably. The participation grade will be determined solely at the discretion of the instructor.

**Subject Pool:** The Psychology Department occasionally recruits students for participation in psychological testing. It is Psychology Department policy to give extra credit points for this participation. Consistent with this policy, I will grant up to 5 extra credit points on one of the midterm exams. The student must clearly indicate that she is using the points on a given exam and have proper documentation of participation in the study. **THESE ARE EXAM POINTS, NOT OVERALL COURSE GRADE PERCENTAGE POINTS.** Points must be submitted prior to the final exam date.

**Course Grade:** The course grade will be calculated to the nearest 0.1%, and the letter grade determined by the table below. In compliance with confidentiality policies, information regarding an individual student's grade(s) will only be communicated to the student in person or through the student's Cedar Crest College email (not through commercial email sources such as Yahoo or Hotmail, nor over the phone). Note: students must earn a C or better in courses counted towards the Psychology major.

A	A-	B+	B	B-	C+	C	C-	D+	D	F
93-100%	90-92.9%	87-89.9%	83-86.9%	80-82.9%	77-79.9%	73-76.9%	70-72.9%	67-69.9%	60-66.9%	<60%