

PSYC 6113/6015/8099 – *Physiological Psychology*

The brain – is wider than the sky – For – put them side by side – The one the other will contain
-Emily Dickinson

Instructor: Mark Faust, Ph.D. **Office:** Room 4041 Colvard
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Office Hours: MW 11:00 am – 12:30 pm, T 12:30 pm – 2:00 pm, open door policy
Text: *Biological Psychology, 2nd Ed.*, by Breedlove et al.
Lecture: T 9:30 am – 12:15 pm, 4102 Colvard
Prerequisites: Graduate Standing, Permission of Instructor

49er Express: All course-related documents (e.g., handouts, & homework assignments) and student grades will be posted on Blackboard pages in 49er Express. See 49er Express webpage if you have problems: <https://secure.uncc.edu/express/>

- Goals:**
- 1) To broadly cover research on the biological basis of mind and behavior
 - 2) To integrate fundamental concepts, theories, and research in biological psychology
 - 3) To become familiar with the techniques used to link mind, brain, and behavior
 - 4) To learn to think critically about issues related to biological psychology

Overview: The course will focus on the biological processes that influence mind and behavior. We will first consider the fundamental neuroscience topics of neurophysiology, functional neuroanatomy, psychopharmacology, and neural development. We will then explore the behavioral and cognitive neuroscience of sensory and motor systems, regulatory systems, and cognitive systems. We will then discuss the biological bases of selected cognitive, affective, and behavioral disorders.

Approximate Grading:	Online Mastery Quizzes (Drop 1 Lowest Grade)	50%
	Class Presentation	15%
	Participation in Class Discussions	10%
	Participation During Student Presentations	5%
	<u>Term Paper</u>	20%
	Total	100%

Notes on Grades:

- (A) Online mastery quizzes will be administered by the Moodle system. Online mastery quizzes will be based on random samples of 20-30 multiple choice questions from the test bank that accompanies the required text. Students will be allowed 3 attempts at each mastery quiz with the highest score being recorded. Each time a student takes a mastery quiz they will receive a new random sample of questions from the question bank. Students will have 30 minutes to complete each mastery quiz, may drop their lowest recorded score. Students should set a goal of an average of 80% across all of the mastery quizzes.
- (B) Students should come to class prepared to discuss assigned readings in the text, as well as the additional readings posted in Moodle. Students should bring 2 discussion questions per reading. Also, students should be prepared to be called upon to provide a summary statement regarding a portion of the assigned readings.
- (C) Students will present a 20 minute lecture on an approved topic during the student presentation meetings. We will discuss potential topics as a group, and students will sign up for topics during this discussion. Students should prepare a PowerPoint presentation to accompany their lecture. These lectures are intended to focus on topics of interest to students that might otherwise be skipped over or not as fully covered in the instructor's lectures.
- (D) The paper will most typically be a subtopic of the student's in-class lecture presentation topic, but does not have to be. The term paper should be written in APA style as a focused review, and should be of

appropriate length to cover a minimum of 10 cited articles or book chapters from the scientific literature on the chosen topic. Topics will be negotiated in class (or directly with the instructor) to avoid duplication of topic and provide broad coverage for the class as a whole.

- (E) Late work will, in general, be penalized by 20% of its original maximum value.
- (F) Minor adjustments to weighting of assignments, quizzes, and exams may be necessary. Students will be notified of such minor changes.

Academic Integrity: UNCC's code of Student Academic Integrity will be followed and enforced in this course. In particular, the following conduct is prohibited: cheating, fabrication and falsification, multiple submissions, plagiarism, abuse of academic materials, and complicity in academic dishonesty. A fuller description of this code can be obtained on p. 275 of the catalogue and complete text of it can be obtained from the Office of the Dean of Students. Violation of the code will result in failure for that activity, possible failure of the course, and possible reporting to Department Chair and Dean. Please see the instructor if you have any questions regarding what constitutes academic dishonesty.

Tentative Schedule :

<u>Week</u>	<u>Date</u>	<u>Lecture Topics</u>	<u>Text Chpt.</u>	<u>Articles</u>	<u>Quiz Chpt.</u>
1	Aug. 23	Organizational Meeting, Introduction	1		
2	30	Functional Neuroanatomy	2	R1	1
3	Sept. 6	Functional Neuroanatomy (cont)			
4	13	Neurophysiology	3		2
5	20	Neurophysiology, Methods			3
6	27	Psychopharmacology, Endocrinology	4, 5		4,5
7	Oct. 4	Vision, Object Recognition	10		6, 7
8	11	<u>Fall Break NO CLASS</u>			9, 10
9	18	Motor Control	11		8, 11
10	25	Sleep, Emotions	14, 15		14, 15
11	Nov. 1	Psychopathology, Memory	16, 17		16, 17
12	8	Language	19	R2, R3	19
13	15	Class Discussion	16	R4, R5	
14	22	Class Discussion	17	R6, R7	
15	29	Class Discussion	19	R8, R9	
16	Dec. 6	Student Presentations, <i>Course Evaluation</i>			
Finals	13	Student Presentations			

Important Note: Last class meeting Tuesday, December 13th, 8:00am – 10:30 am

NOTE: (A) Unforeseen circumstances may necessitate changes to course schedule or policies. Ample notice will be given. (B) If you have a specific disability that qualifies you for academic accommodation, please notify the instructor and provide certification (Office of Disability Services, 237 Fretwell, 704-687-4355, www.uncc.edu/dability/).

Reading List

1. Hillman, C. H., Erickson, K. I., & Kramer, A. F. (2008). Be smart, exercise your heart: Exercise effects on brain and cognition. *Nature reviews. Neuroscience*, *9*, 58-65.
2. Frederici, A.D. (2009). Pathways to language: Fiber tracts in the human brain. *Trends in Cognitive Sciences*, *13*, 175-181.
3. Karayiorgou, M., Simon, T.J., & Gogos, J.A. (2010). 22q11.2 microdeletions: Linking DNA structural variation to brain dysfunction and schizophrenia. *Nature Reviews Neuroscience*, *11*, 402-416.
4. Shuo, M. (2008). Cortical excitation and chronic pain. *Trends in Neurosciences*, *31*, 199-207.
5. Zeidan, F., Martucci, K.T., Kraft, R.A., Gordon, N. S., McHaffie, J.G., & Coghill, R.C. (2011). Brain mechanisms supporting the modulation of pain by mindfulness meditation. *The Journal of Neuroscience*, *31*, 5540-5548.
6. Dani, J. a, & Balfour, D. J. K. (2011). Historical and current perspective on tobacco use and nicotine addiction. *Trends in neurosciences*, *34*, 383-392. Elsevier Ltd. doi:10.1016/j.tins.2011.05.001
7. Nir, Y., & Tononi, G. (2010). Dreaming and the brain: from phenomenology to neurophysiology. *Trends in cognitive sciences*, *14*, 88-100. doi:10.1016/j.tics.2009.12.001
8. Ulrich-Lai, Y. M., & Herman, J. P. (2009). Neural regulation of endocrine and autonomic stress responses. *Nature reviews. Neuroscience*, *10*, 397-409. doi:10.1038/nrn2647
9. Kringelbach, M. L., & Berridge, K. C. (2009). Towards a functional neuroanatomy of pleasure and happiness. *Trends in cognitive sciences*, *13*, 479-87. doi:10.1016/j.tics.2009.08.006