BIBB 109/ PSYC 109/BIOL 109
Introduction to Brain and Behavior
Spring 2015
M, W, F 10-10:50am
B6 Stiteler

Instructor: Dr. Julie McGurk , mcgurk@sas.upenn.edu , 215-898-2126
Office: Sansom Place East, room 224 (need your Penn ID to get in)
Office Hours: Mondays 12:30 – 1:30pm and Thursdays 2 – 3pm or by appointment.

Lab Coordinator: Dr. Mike Kaplan, mkap@sas.upenn.edu

Teaching Assistants:	Email	Recitation/Lab
Isaac Perron	iperron@mail.med.upenn.edu	Head TA
Kamesh Krishnamurthy	kamesh@mail.med.upenn.edu	Tues. 9-10:30am
Esteban Luna	estebanl@mail.med.upenn.edu	Tues. 10:30am-12pm
Peter Dong	dong1@mail.med.upenn.edu	Tues. 12-1:30pm
Sahil Doshi	dsahil@sas.upenn.edu	Tues. 1:30-3pm
Ian McLaughlin	ianmc@mail.med.upenn.edu	Tues. 3-4:30pm
Emily Davis	emidav@sas.upenn.edu	Tues. 4:30-6pm
Jeffrey Nirschl	jnirschl@mail.med.upenn.edu	Thurs. 9-10:30am
Brianne Jeffrey	brije@mail.med.upenn.edu	Thurs., 10:30am-12pm

Textbook:
Bear, Connors, and Paradiso. Neuroscience: Exploring the Brain. 3rd ed. Baltimore, Md.: Lippincott Williams and Wilkins, 2007. ISBN: 0781760038.

Course Description:
This course will provide a comprehensive introduction to the nervous system, focusing on the structure and function of the human brain. We will begin with the physiology of the cells of the nervous system and build to understand the structure and functions of the nervous system at an organismal level. Finally, we will discuss how the nervous system develops and changes as we age, and how mental illness manifests itself through aberrations in this process.

This course is designed to be interactive. Lectures will be supplemented by in-class activities and Learning Catalytics questions, recitation discussions will be directed by your quiz performance and questions, and labs are meant to give you a more hands-on experience with the material.

Canvas: https://canvas.upenn.edu/courses/1259001
This site has been set-up to facilitate student participation and communication. Weekly quizzes, lecture slides, lecture recordings, labs, and any supplemental files can be found on this site. *Course announcements will be the primary form of communication, so you must set your notifications in Canvas so that you will receive these messages in a timely fashion.*

Recitations/Labs:
All recitations/labs will meet in room **A3 Solomon Psych Lab Bldg**. Four of these weekly recitations will be a lab. You may not attend a recitation that you are not signed up for without the permission of the Head TA, the Program Coordinator or the Instructor. In preparation for recitation, you are required to take a multiple choice quiz on the week's material on Canvas *by 6pm the day before your recitation* to receive credit. For any multiple choice questions you get wrong, you can submit the corrected answers with explanation *by the start of your recitation period* to regain points lost for incorrect answers.

Date	Topic	Reading	Lab
Jan. 14th	Intro/ A Brief History of Neuroscience	Ch. 1, p. 4-13 (optional) Ch. 2, p. 24-27	
Jan. 16th	Neurons and Glia	Ch. 2, p. 35-48 & review p. 28-35	
Jan. 21st	The Resting Membrane Potential	Ch. 3	
Jan. 23rd	The Action Potential	Ch. 4, p. 76-92	
Jan. 26th	Action Potential Conduction	Ch. 4, p. 93-100	1
Jan. 28th	Chemical vs. Electrical Synapses	Ch. 5, p. 102-122	
Jan. 30th	Synaptic Integration	Ch. 5, p. 122-128	
Feb. 2nd	Neurotransmitters	Ch. 6, p. 141-152	
Feb. 4th	Neurotransmitter Receptors	Ch. 6, p. 152-65	
Feb. 6th	Studying Neurotransmitter Systems	Ch. 6, p. 134-41	
Feb. 9th	Synaptic Plasticity	Ch. 23, p.716-20 Ch. 25, p.777-86	
Feb. 11th	Review		
Feb. 13th	EXAM 1		
Feb. 16th	Neuroanatomy and Development	Ch. 7	2
Feb. 18th	Vision/ Signal Transduction	Ch. 9, p. 278-82 & p. 288-96	
Feb. 20th	Vision/ Retinal Processing	Ch. 9, p. 298-306	
Feb. 23rd	Vision/ Striate Cortex	Ch. 10	
Feb. 25th	Somatosensation	Ch. 12	
Feb. 27th	Movement/ Spinal Control	Ch. 13 p. 424-46	
Mar. 2nd	Movement/ CNS Control	Ch. 14, p. 452-64 & p. 468-72	3
Mar. 4th	Movement/ Basal Ganglia and Cerebellum	Ch. 14, p. 464-7 & p. 472-7	
Mar. 6th	Taste	Ch. 8, p. 252-63	
Mar. 16th	Olfaction	Ch. 8, p. 263-75	
Mar. 18th	Audition/ Signal Transduction	Ch. 11, p. 344-63	
Mar. 20th	Audition/ Stimulus Encoding	Ch. 11, p. 363-75	
Mar. 23rd	The Vestibular System	Ch. 11, p. 376-85	
Mar. 25th	Review		
Mar. 27th	EXAM 2		
Mar. 30th	Learning and Memory/Memory Systems	Ch. 24	4
Apr. 1st	Development	Ch. 23, p. 690-704	
Apr. 3rd	Development	Ch. 23, p. 704-716 & p. 720-22	
Apr. 6th	Brain Imaging Techniques	Supplemental reading	
Apr. 8th	The Hypothalamus and Autonomic Nervous System	Ch. 15, p. 482-97	
Apr. 10th	Diffuse Modulatory Systems and Motivation	Ch. 15, p. 498-507 Ch. 16, p. 510-1 & p. 522-30	
Apr. 13th	Sleep	Ch. 19, p.586-92 & p.594-607	
Apr. 15th	Circadian Rhythms	Ch. 19, p.607-16	
Apr. 17th	Sex and the Brain	Ch. 17	
Apr. 20th	Emotion	Ch. 18	
Apr. 22nd	Language	Ch. 20	
Apr. 24th	Frontotemporal Dementia	Supplemental reading	
Apr. 27th	Mental Illness	Ch. 22	
Apr. 29th	Review		
May 6th	FINAL EXAM 12-2pm		

Other dates to note: Jan. 19th is a University Holiday
***Feb. 20th** the drop period ends*
Mar. 7th – 15th is Spring Break
***Mar. 27th** is the last day to withdraw*

Grading:
There will be 2 short-answer exams during the semester (2/13 and 3/27) in addition to a cumulative final exam (5/6, 12-2pm). Participation is required and is a part of the grade for this course. One-third of your participation grade will be based on answering Learning Catalytics questions in lecture, starting Jan. 16th. Learning Catalytics questions will not be graded on whether or not they are answered correctly. Another third of your participation grade will be based on the weekly pre-recitation quizzes, which will provide feedback on your understanding of the material in preparation for recitation. The last third is based on your participation in recitation discussions. Your grade for the lab portion will be based on take home problems, in-class quizzes, and participation in the activities associated with the labs.

Exams	**40%**
Lab	**10%**
Participation	**15%** (Learning Catalytics, weekly quizzes, and recitation)
Final Exam	**35%**

Other Class Policies:

- **Learning Catalytics Policies:** You must register with Learning Catalytics by Jan. 16th (see Canvas for more details**).** Answers to Learning Catalytics questions are considered an indicator of your participation in the larger class discussion, therefore you MUST be present in class to answer these questions. If you are found to be responding to questions while not present in class or if someone is answering these questions for you, this will be considered a misrepresentation of your work and you will be reported to the Office of Student Conduct. You will need to bring an electronic device (smartphone, tablet, laptop) that can open a web browser to class everyday to answer Learning Catalytics questions. If you do not have a device to use for this purpose, please let me or the Head TA know as soon as possible. If you forget your device or it is not working, please let me or the Head TA know either before or after class and your participation for the day will be counted. If you do not have a working device more than 5 times, you will no longer be given credit for participation. *It is your responsibility to make sure your device is charged in preparation for class.*
- **Lecture Absences:** If you answer less than 75% of Learning Catalytics questions per day you will be counted as absent, and therefore receive no credit for participation for the day. You are allowed up to 6 absences from lecture during the semester for any reason. After 6 absences, points will be deducted from your participation grade. Extenuating circumstances, such as a documented extended illness, will be considered on a case-by-case basis.
- **Recitation/Lab Absences:** Recitations/labs can only be missed for last minute excused absences, such as illness or severe inclement weather. If you have a conflict with the recitation/lab due to curricular or extracurricular activities, personal obligations, or religious holidays please let the TA and instructor know as soon as possible to make arrangements to attend a different section or make up the recitation/lab with your TA.
- **Weekly Multiple Choice Quizzes:** Each quiz will have two questions per lecture (with the exception of the first class, for which there will only be one question). The multiple choice quizzes will be timed (1 minute per question) and must be submitted by 6pm the day before your recitation. You will then be given the option to submit an explanation of what you think the correct answers are to any multiple choice questions you got wrong by your recitation time in order to regain any points lost on the multiple choice quiz. Weeks in which there are labs, there will not be a quiz.
- **Technology Etiquette:** Although we will be using electronic devices in class, they should not be audible during class. If you are using a smartphone to answer Learning Catalytics questions, if possible, turn it to airplane mode with WiFi manually enabled. Close other websites and email during class to keep you and those around you from being distracted. If someone sitting near you is distracting you, feel free to let them know. Although you are welcome to use computers or tablets for notetaking, I would suggest taking notes on the

handouts provided in class because I will often annotate figures. Looking at ANY electronic device during an exam will be considered an act of cheating and reported to the Office of Student Conduct. Therefore, it is in your best interest to make sure that such devices are turned off and in your bag before an exam.

- **Exams:** If you need to miss an exam for a legitimate reason (e.g., religious holiday) please let the instructor know within the first week of class or as soon as you know about a conflict. You will need to schedule a make-up exam *before the scheduled exam day*. Exams missed unexpectedly will be considered for make-up on a case by case basis and will otherwise result in a zero. It is within your right to request that an exam question be regraded. Any such request should be given in writing to the Head TA within one week after an exam is returned, explaining why you believe it should be regraded. It will result in a regrading of the entire exam, using copies we will have on file.
- **Email Etiquette:** Your TAs and I will do our best to respond to emails within 24 hours, although over weekends and holidays it may be longer. Course content questions are best asked in recitation, at office hours, in tutoring, or with your study buddy, not through email.

Students with Disabilities:
Students with a documented disability from Student Disability Services will receive all necessary accommodations.

Academic Integrity:
I expect you to act with academic integrity in accordance with the University of Pennsylvania's Code of Academic Integrity, which defines academic dishonesty as "activities that have the effect or intention of interfering with education, pursuit of knowledge, or fair evaluation of a student's performance". For examples see:
http://www.upenn.edu/provost/PennBook/academic_integrity_code_of
Any act of academic dishonesty will be reported to the Office of Student Conduct.

How to do well in this course:
Do the reading (skim for big ideas before class and read for important details after class)
Participate in class and recitations
Use weekly quizzes as a way to identify what you don't understand
Test yourself
Come to office hours
Go to tutoring at the Tutoring Center and weekly sessions
Seek academic support at the Weingarten Resource Center
Find a study buddy

Name:_____ Email/Phone:_____

Name:_____ Email/Phone:_____