NEURL-UA 100 — *Introduction to Neural Science* — Fall 2017

Instructor

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Teaching assistants

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Office hours are by appointment.

Lectures: Mondays and Wednesdays, 2:00 to 3:15, 122 Meyer.

Recitations meet 4:55–6:10 Monday–Thursday and 11–12.15 Friday. If you cannot make the recitation for which you are registered, and there is space in another, you can arrange with the responsible TA to switch to a different section. Jenn Lee will lead the Monday and Thursday recitations, Pam Osborn Popp the Tuesday and Wednesday recitations, and Xiaoyue Zhu the Friday recitations.

Text. *Neuroscience: Exploring the Brain,* 4th edition, by Mark F. Bear, Barry W. Connors and Michael A. Paradiso; Baltimore: Lippincott Williams and Wilkins, 2016 ("BCP"). Supplementary readings may be distributed in class or via NYU Classes. In general it is a good idea to do the assigned reading before class because lectures will assume that you have some familiarity with the material. You will probably wish to read it again more carefully after lecture.

Many of the slides used in class are taken from *Principles of Neural Science*, by Eric R. Kandel, James H. Schwartz, Thomas M. Jessell, Steven A. Siegelbaum and A. James Hudspeth; New York, McGraw-Hill, 2012 ("KSJ"). Some of you may find this more advanced book a valuable source of additional readings.

If you find the main text too challenging, you may find *Biological Psychology*, by S. Marc Breedlove and others, to be a useful source of background material. Any recent edition will be acceptable (the 7th is the current edition).

Online material. All course information will be distributed through NYU Classes. Lecture slides, additional readings and supplementary materials, and other course information will be available there. Slides will be posted before or after each lecture.

Exams and grading. There will be two mid-semester exams and a comprehensive final. Exams 1 and 2 will each count for about 25% of the final grade; the final exam will count for about 50%. Minor grade adjustments will depend on class and recitation participation. Study questions will be distributed before each exam. The 75 minute midterm exams will be in class on October 4th and November 13th. The final will be a 110 minute test on December 18th. Exams will all be in the form of short essays.

Schedule of lectures and readings

Date	Lecture topic	Readings
9/6/17	Introduction and history of neuroscience	BCP1
9/11/17	Neurons and glia	BCP2
9/13/17	Membrane properties of the neuron	BCP3
9/18/17	Action potentials and impulse propagation	BCP4
9/20/17	Synaptic transmission	BCP5
9/25/17	Synaptic integration	BCP5,6
9/27/17	Neurotransmitters and neuromodulators	BCP6
10/2/17	Structure of the nervous system	BCP7, Appendix
10/4/17	**Midterm 1**	
10/11/17	Chemical senses, transduction	BCP8
10/16/17	Visual system 1	BCP9
10/18/17	Visual system 2	BCP10
10/23/17	Visual system 3	BCP10
10/25/17	Somatic sensory system	BCP12
10/30/17	Auditory system 1 (Sanes*)	BCP11
11/1/17	Auditory system 2; Vestibular system (Sanes*)	BCP11
11/6/17	Motor control 1	BCP13
11/8/17	Motor control 2	BCP14
11/13/17	**Midterm 2**	
11/15/17	Chemical control of brain and behavior	BCP15
11/20/17	Motivation and emotion	BCP16,18
11/27/17	Language	BCP20
11/29/17	Attention and consciousness	BCP21
12/4/17	Decision making (Zhu*)	TBA
12/6/17	Mental illness (Lee*)	BCP22
12/11/17	Development and plasticity	BCP23
12/12/17	Memory systems (Osborn Popp*)	BCP24
12/13/17	Memory mechanisms	BCP25

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*Guest lecturer