

BISC-230xg, **Biology of the Brain**

Fall Semester 2021

Course Description: This is a GE course (D, Life Sciences) designed for non-science majors and is not available for major credit. Topics to be considered include the structure and function of the brain of humans and other animals including the role the brain plays in regulating a range of behaviors.

Learning Objectives: After completing this course, students will have a clear understanding of how neurons function and how they control a variety of perceptions and behaviors.

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Laboratory Director: Michael Moore; moore@college.usc.edu
Office: 371B ZHS; 740-6084

Teaching Assistant: TBA

Blackboard:
<https://blackboard.usc.edu>

Textbooks (recommended, not required):

(MM): *The Mind's Machine* by Watson and Breedlove, 3rd edition.

Publisher: Sinauer. ISBN: 9780878939336.

(SP): *Sensation and Perception* by Wolfe et al., 5th edition.

Publisher: Sinauer ISBN: 9781605352114

Note: previous versions may also be used and may be less expensive.

Lectures: MWF 12:00-12:50 PM, THH 210

PowerPoint slides of the lectures will be posted to Blackboard in advance of each class meeting. The contents of these slides will be drawn largely from the textbook readings but may also contain information from other sources. A successful learning strategy is to read over the lecture notes before class so that class time can be efficiently spent learning the material in greater depth.

Grading (there is no "extra credit" so please, don't ask):

Lecture Exam 1 (Friday, September 17)	100 points
Lecture Exam 2 (Wednesday, October 13)	100 points
Lecture Exam 3 (Monday, November 8)	100 points
Lecture Exam 4 (Friday, December 10; 11AM-12PM)	100 points
Laboratory	100 points
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Total	500 points

Lecture Exams:

There will be four in-class exams that will consist of a mix of short-answer, multiple choice, true/false, fill-in-the-blank and matching type questions. Exams will cover information given in lectures only; laboratory performance will be covered separately in the labs (see below). The final exam will cover material since the third exam. If you arrive late for an exam and another student has already finished their exam and left the exam room you will not be permitted to take the exam and will receive a score of zero for that exam.

Pass/No Pass Policy:

Students taking this course with the Pass/No Pass option must have a final score equivalent to "C minus" or better to receive a "Pass." "No Pass" will be assigned for final scores less than the equivalent of a "C minus."

Re-Grading of Exams:

If you wish to have one or more exam questions re-graded you must submit a *written* request within one week of when your exam was returned to you. The entire answer will be re-graded, not just the part you think deserves more credit. Your score may go up or down as a result of a re-grade.

Missed Exams:

No make-up exams will be given. Students who are unable to take an exam at the scheduled time must give written notification as soon as possible, preferably in advance. Students who miss an exam, assignment, quiz, etc. for a legitimate reason of *something out of their control* (e.g. a medical issue or a University-sanctioned event) must provide written documentation of said reason within seven days of the exam or assignment due date. Documentation must be sent to Dr. Moore. If documentation is not received within seven days the score for the missed assignment will be a zero. Upon receipt of valid documentation, the score for the missing assignment will be prorated. In other words, the score for the missed assignment will be the average of the score for the other like assignments. (For example, if exam 2 is missed, that score will become the average of exams 1, 3, and 4). Note that proration will only be done for one missed exam. This policy does not apply for the Fourth Exam which cannot be missed.

Final Grade Determination:

Grades will be assigned on a curve, based on the total number of points earned in the course. After each exam a curve will be given by the instructors to indicate roughly what letter grade corresponds to students' current number of points. Specifically, you will be provided with the current course average and a provisional letter grade scale. Please remember that the course mean provided on Blackboard is provisional as it is based on the number of points possible at that point in the course. Only the total number of points earned by the end of the semester will determine course grades.

Lecture Schedule:

Lecture #	Date	Topic	Reading
1	M 8/23	Introduction to and overview of the course.	
2	W 8/25	Evolution of the brain.	MM: Chapter 1
3	F 8/27	Structure and organization of the nervous system I.	MM: Chapter 2 SP: Chapter 1
4	M 8/30	Structure and organization of the nervous system II.	MM: Chapter 2 SP: Chapter 1
5	W 9/1	Cells of the nervous system.	MM: Chapters 2, 13 SP: Chapter 1
6	F 9/3	Development of the nervous system.	MM: Chapters 2, 13 SP: Chapter 1
	M 9/6	<i>University Holiday (Labor Day)</i>	
7	W 9/8	Electrical properties of neurons.	MM: Chapter 3 SP: Chapter 1
8	F 9/10	Neurophysiology.	MM: Chapter 3; SP: Chapter 1
9	M 9/13	The importance of myelination.	MM: Chapter 3; SP: Chapter 1
	W 9/15	Review for Exam 1.	
	F 9/17	Exam 1, 100 points (covers lectures 1-9).	
10	M 9/20	Neuronal communication at synapses.	MM: Chapter 4
11	W 9/22	Synaptic summation and integration.	MM: Chapter 4
12	F 9/24	The somatosensory system.	MM: Chapter 5 SP: Chapter 13
13	M 9/27	Sound and hearing I.	MM: Chapter 5 SP: Chapters 9,10
14	W 9/29	Sound and hearing II.	MM: Chapter 5 SP: Chapters 9,10
15	F 10/1	The vestibular system I.	MM: Chapter 5 SP: Chapter 12
16	M 10/4	The vestibular system II.	MM: Chapter 5 SP: Chapter 12
17	W 10/6	Olfactory system.	MM: Chapter 5 SP: Chapter 14
18	F 10/8	Gustatory system.	MM: Chapter 5 SP: Chapter 15
	M 10/11	Review for Exam 2.	
	W 10/13	Exam 2, 100 points (covers lectures 10-18).	
	F 10/15	<i>University Holiday (Fall Break)</i>	
19	M 10/18	The eye and optics.	MM: Chapter 7 SP: Chapter 5
20	W 10/20	From retina to brain.	MM: Chapter 7 SP: Chapter 5
21	F 10/22	Visual processing by the brain.	MM: Chapter 7 SP: Chapter 5
22	M 10/25	Color vision.	SP: Chapter 5
23	W 10/27	Perception of objects.	MM: Chapter 4

24	F 10/29	Binocular vision.	MM: Chapter 6 SP: Chapter 6
25	M 11/1	Attention and consciousness.	MM: Chapter 14 SP: Chapter 7
26	W 11/3	Scene and motion perception.	SP: Chapter 8
	F 11/5	Review for Exam 3.	
	M 11/8	Exam 3, 100 points (covers lectures 19-26).	
27	W 11/10	Learning and Memory I.	MM: Chapter 13
28	F 11/12	Learning and Memory II.	MM: Chapter 13
29	M 11/15	Biological Rhythms.	MM: Chapter 10
30	W 11/17	Sleep.	MM: Chapter 10
31	F 11/19	Language I.	MM: Chapter 8
32	M 11/22	Language II.	MM: Chapter 12
	W 11/24	<i>University Holiday (Thanksgiving)</i>	
	F 11/26	<i>University Holiday (Thanksgiving)</i>	
33	M 11/29	Left brain and right brain.	MM: Chapter 15
34	W 12/1	TBA	
	F 12/3	Review for Exam 4.	
	F 12/10	Exam 4, 100 points 11AM-12PM covers lectures 27-34).	

Academic conduct, students with disabilities:

Any student requesting academic accommodations based on a disability is required to register with the Office of Disability Services and Programs (DSP, STU 301, 213-740-0776) each semester. You must deliver an approved DSP letter to Dr. Moore early in the semester as possible. Please see SCampus (<http://www.usc.edu/dept/publications/SCAMPUS/>) for additional policies that are not covered here (i.e. academic integrity, proper conduct, etc.) but that do still apply.

Laboratory portion of course: a separate syllabus will be made available explaining the labs. Labs will begin the second week of class; be sure to attend the first offering of your lab section.