Behavioral and Integrative Neural Science (BINS)

NEURL-UA 220

Lecture course addressing the physiological and anatomical bases of behavior. Lectures will emphasize mammalian sensory, motor, cognitive, and motivational mechanisms involved in the control of behavior, higher mental processes such as those involved in attention and memory, and disorders of the nervous system. The goal of the course is not to develop skills in rote memorization but to demonstrate an ability to use information to draw appropriate conclusions.


Grade Calculation: Mid-term 1: 25% Mid-term 2: 25% Final: 50%

Up to one Mid-term can be missed due to illness or another pre-approved reason and the grade will be calculated based on the remaining Mid-term and Final: Mid-term 25%, Final 75%. Under extenuating circumstances, the Final can be missed and a makeup Final will be offered during the Fall semester, 2018. Policy for Seniors is to be decided.

50% of the Final will cover the last third of the class – ie what was not covered by the midterms. The remaining 50% of the Final covers each third of the class equally. This means that 2/3 of the Final covers material from the last third of the class and 1/6 of the final covers material from each other third of the class.

Participation can increase point-based grade by at least one increment. For example, a B- can be boosted to a B.

Course Topics

Class 1    Intro/scope Perception and action ch22
Class 2    Brain imaging techniques and results ch5,6
Class 3    Electrophysiological & optogenetic techniques and results ch5
Class 4    Vision 1: Eye to brain ch26
Class 5    Vision 2: Primary visual cortex ch26
Class 6    Vision 3: Color vision ch26
Class 7    Vision 4: Mid-level and Hi-level vision & object recognition ch44
Class 8    Audition: sound, ear, cochlear nucleus + brain ch25
Class 9    Mid-term 1 - Review (Lectures 2-8)
Class 10   Chemical Senses ch23
Class 11   Somatic sensation ch24
Class 12   Mid-term 1 - Exam
Class 13   Motor systems 1: fundamentals ch27
Class 14   Motor systems 2: cortex ch29
Class 15   Motor systems 3: basal ganglia ch30
Class 16   Motor systems 4: cerebellum ch31
Class 17   Executive function ch50
Class 18   Mid-term 2 - review (Lectures 11-16) SP+TAs
Class 19   Mid-term 2 - Exam
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<td>Learning and memory I: Non-associative and associative learning ch47</td>
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+: Additional assigned readings will be posted on NYU Classes
Readings are from the chapters in *Fundamental Neuroscience* 4th edition