

Mind, Brain and Behavior
Columbia University, Fall 2015
Katherine Nautiyal, PhD

Psychology W1010
Tuesday/Thursday 11:40-12:55
501 Schermerhorn Hall

UPDATED 10-20-15

Instructor:

Katherine Nautiyal, PhD; email: kmn2116@cumc.columbia.edu
Office hours: Schermerhorn Extension 356
Tuesdays 9-10am, Thursdays 10:30-11:20am, or email to schedule an appointment

Teaching Assistants:

Email for all TAs: MBBFall2015TAs@gmail.com

Caroline Marvin
cbm2118@columbia.edu
Mon 11-12, Tues 10:30-11:30
Schermerhorn 312

Noam Zerubavel
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Thurs 3:30-5:30pm
Schermerhorn 324A

Kristina Flemming
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Wed 9-10am, Tues 3-4pm
Schermerhorn 318C

Nathan Kung
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Mon 2:30-4:30
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Steve Maroti
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Wed 1:30-3:30
Schermerhorn 318C

Kavya Shivashankar
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Mon 11:30-12:30, Thurs 9:30-10:30
Schermerhorn 318C

Course Description:

This course will provide a broad introduction to neuroscience, cognition and biological psychology. We will start with an overview of the brain and the basics of how it is organized, and how it receives and processes information. Next we will cover how some simple and complex behaviors are regulated, for example movement, feeding and social behaviors. Finally we will examine cognition such as learning and memory; and behavioral and psychiatric dysfunction.

Course Goals:

- To become familiar with the brain and understand the basics of neurotransmission.
- To explore some ways in which the brain controls behavior at the molecular, cellular and systems levels.
- To examine a variety of topics in the domain of biopsychology including the senses, homeostatic behaviors and cognition.
- To acquire the necessary background to understand primary literature and take more advanced courses in biopsychology and neuroscience.
- To develop a better understanding of the relationship between the mind, the brain and behavior.

Readings and Lectures:

- The required textbook for this course is Biological Psychology (7th Edition), by S. Marc Breedlove, Neil V. Watson and Mark R. Rosenzweig. Additional readings for some topics will be provided on Courseworks. Optional readings from the primary literature will provide extra information on some topics and studies.
- Powerpoint files of slide shows used in class will be provided on Courseworks, before the class when possible.

Method of Evaluation:

-Midterm (30%) and Final (40%) Exams

The exams will be comprised of multiple choice, fill-in the blanks and short essay questions. Exams are required, and must be taken at the time and date listed on the syllabus. An unexcused absence will result in a grade of F on that exam. To be excused from an exam in the event of a medical or family emergency, notify me prior to the exam if at all possible; as soon as you are able, you will have to present documentation certifying the legitimacy of your absence. Please make note of the midterm and final exam dates now and speak to me during the first week of class if you anticipate a problem. Make-ups will only be scheduled with official documentation stating that you were unable to attend the exam. In no circumstance will an exam be administered early. Exams will not be “curved” but final term grades will be assigned based on the distribution of numerical grades.

-2 Quizzes (15% each)

Quizzes will be 40 minute long mini-exams of designed to keep you up-to-date on material. Doing poorly on these quizzes can not hurt your grade. If your quiz 1 score is better than half of your midterm grade, it will count for 15% of your final grade. If it is worse than your midterm grade – the midterm will count for 45% of your final. If your quiz 2 score is better than your final score, it will count for 15% of your final grade, else your final exam will be worth 55%. There are no make-ups for quizzes. If you are unable to attend or do not take a quiz, the midterm or final will count for 15% more if you miss the first or second quiz, respectively.

-Experiment participation extra-credit (3%)

You may earn extra credit points to be added onto your final term grade by participating in experiments run by researchers in the department. You may earn a maximum of 6 “credits” equivalent to a 3% boost in your final grade. One “credit” is earned for every 30 minutes of participation in an experiment. Additionally, to earn your credits you must also turn in a write-up (~200 words) on Courseworks which summarizes your role as a subject, and main research question of the study. One caveat: extra credit cannot move your grade from an A to A+ (only a few A+ grades are awarded based on quiz/exam scores only).

Class Policies:

Academic Integrity: "The intellectual venture in which we are all engaged requires of faculty and students alike the highest level of personal and academic integrity. As members of an academic community, each one of us bears the responsibility to participate in scholarly discourse and research in a manner characterized by intellectual honesty and scholarly integrity. . . . In practical terms, this means that, as students, you must be responsible for the full citations of others' ideas in all of your research papers and projects; you must be scrupulously honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet agent." From the Faculty Statement on Academic Integrity - www.college.columbia.edu/academics/integrity-statement.

Cheating on assignments or exams and plagiarism are very serious violations within the academic community. Students are expected to do their own work on all tests and assignments for this class. You are expected to always act in accordance with the Columbia honor code. Any student found cheating or plagiarizing in this class will be reported to Columbia's Office of Judicial Affairs and Community Standards for evaluation and academic discipline. If you have questions about any aspect of academic integrity at Columbia, please refer to the following link: www.college.columbia.edu/academics/integrity and if you have specific questions about the judicial process, please see www.college.columbia.edu/academics/disciplinaryprocess.

Schedule:

Date	Topic	Reading
Sept 8	Course Introduction	
Sept 10	Basics of the brain	Chapter 2 only through pg 49
Sept 15	Neurons and Signaling I	Part of Chapter 3 (pg 59-71)
Sept 17	Neurons and Signaling II	Part of Chapter 3 (pg 72-82); Part of Chapter 4 (through pg 107)
Sept 22	Genetics and Epigenetics of Behavior	A1-A3;178-182; 204-209
Sept 24	Methods to study the brain	Pg 26-27; 49-55; 84-88; 217-218; A3-A7
Sept 29	Philosophy of mind Guest Lecture: Ian Halim, PhD	583-588 and TBD
Oct 1	QUIZ 1 ; Perception-Touch and Pain	Chapter 8
Oct 6	Perception-Taste and Smell	Part of Chapter 9 (276-287)
Oct 8	Perception-Hearing and Higher Order Perception	Part of Chapter 9 (255-273)
Oct 13	Perception-Vision	Chapter 10
Oct 15	Motor Behavior	Chapter 11
Oct 20	Review	--
Oct 22	MIDTERM EXAM	--
Oct 27	Hormones and Behavior	Chapter 5
Oct 29	Stress	Pgs 479-487
Nov 3	No Class, Election Day - University Holiday	Vote!
Nov 5	Feeding	Chapter 13
Nov 10	Sleep	Chapter 14
Nov 12	Affiliative and aggressive behavior	Pgs 361-373; 476-479
Nov 17	QUIZ 2 ; Learning and memory	Chapter 17
Nov 19	Learning and Memory	Chapter 17
Nov 24	Motivation and Memory Guest Lecture: Caroline Marvin	Shohamy & Adcock 2010 on Cswks
Nov 26	No Class, Thanksgiving – University Holiday	
Dec 1	Emotions; Psychiatric Disorders	Pgs 457-476; Chapter 16
Dec 3	Treatments for disorders	Chapter 16
Dec 8	The Social Brain Guest Lecture: Noam Zerubavel	TBD
Dec 10	Wrap-up and review	--
Dec 17 4:10-7pm	FINAL EXAM date determined by University schedule	--