

BILD 12 - Neurobiology and Behavior - Komiyama [WI24]

BILD 12: Neurobiology and Behavior (Winter 2024)

Prof. Takaki Komiyama

Mon & Wed 17:00 - 18:20 PODEM1A20 (in person)

Course website on Canvas

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Course description: This is an introductory course on how the nervous system interacts with the environment. We will cover the basics of cellular organizations of the nervous system, how it processes sensory information, how it generates motor output and behaviors, and how one learns from experience. This class assumes little science background beyond high school biology and is recommended for non-science majors who are interested in the brain.

Textbook:

“Neuroscience- Exploring the Brain” by Bear, Connors and Paradiso.

- Recommended but not required. The course follows the textbook fairly closely.

Instructional assistants:

Jo-hsien Yu joyu@ucsd.edu (<mailto:joyu@ucsd.edu>)

Review sections and office hours start in the second week (week of 1/15).

- Section (optional):
 - A01 W 12:00p-12:50p RCLAS R04
- IA office hour: W 1:30-2:30p Tata Hall 3101

Grading: In-class assignments (12%), Midterm (35%) and Final (53%)

1. In-class assignments (12%)
 1. Given at the end of each lecture, starting from the second week.
 2. Hand it to the assistant before leaving the lecture room.

3. You get one point for each completed assignment. There are 14 lectures eligible for a point. Your point maxes out at 12 points, meaning you would not be penalized for missing up to 2 lectures.
2. Midterms (35%, in class on 2/5 and 2/26, the better score of the 2 counts) and Final (53%)
 1. Multiple choice and short answer questions.
 2. Please do not take the class if you know you cannot take at least one midterm and the final. Final make up is oral exam; only with a Biology-department approved documented excuse. No makeup given for midterms.
 3. If you are late by more than 30 minutes for an exam, you will not be able to take it.
 4. Each exam is curved.
 5. Midterm 1 covers lectures 1-5, Midterm 2 covers lectures 6-10, and the Final is cumulative with an emphasis on lectures 11-15.
3. Grades:
 - >82 A (A-, A, A+)
 - >71 B (B-, B, B+)
 - >60 C (C-, C, C+)
 - >44 DP is C- or better

Academic dishonesty:

Please don't cheat. If you are uncertain about what academic integrity means, please read the Policy on Integrity of Scholarship (academicintegrity.ucsd.edu).

In this class the following are examples of what are considered cheating:

1. Taking an exam or assignment on someone else's behalf.
2. Copying someone else's exam or assignment.
3. Using your phone or other electronic device during an exam.
4. Smuggling course-related information into an exam.
5. Hiding cheat-sheets in the bathroom.
6. Sending an email that contains fabricated statements (e.g. "I'm sick" when you're not)

This is not a comprehensive list. Use your best judgment or ask.

No tolerance policy:

Under federal law, UC San Diego students have the right to an educational environment that is free from harassment and discrimination. The Office for the Prevention of Harassment & Discrimination (OPHD) provides assistance to students, faculty, and staff regarding reports of bias, harassment, and discrimination. This includes the classroom setting.











Students have options for reporting incidents of sexual violence and sexual harassment. Sexual violence includes sexual assault, dating violence, domestic violence, and stalking. Information about reporting options may be obtained at OPHD at [\(858\)534-8298 \(mailto:8585348298\)](tel:8585348298), [ophd@ucsd.edu \(mailto:ophd@ucsd.edu\)](mailto:ophd@ucsd.edu) or [http://ophd.ucsd.edu \(http://ophd.ucsd.edu\)](http://ophd.ucsd.edu). Students may receive confidential assistance at CARE at the Sexual Assault Resource Center at (858) 534-5793, [sarc@ucsd.edu \(mailto:sarc@ucsd.edu\)](mailto:sarc@ucsd.edu) or [http://care.ucsd.edu \(http://care.ucsd.edu\)](http://care.ucsd.edu) or Counseling and Psychological Services (CAPS) at [\(858\) 534-3755 \(tel:%28858%29%20534-3755\)](tel:8585343755) or [http://caps.ucsd.edu \(http://caps.ucsd.edu\)](http://caps.ucsd.edu).








General outline (subject to change) (textbook chapters):

- 1/8 Lecture 1: Introduction, Neuron (Ch. 2)
- 1/10 No lecture
- 1/17 Lecture 2: Membrane potential and action potential (Ch. 3-4)
- 1/22 Lecture 3: Synaptic transmission (Ch. 5-6)
- 1/24 Lecture 4: Anatomy, methods (Ch. 7)
- 1/29 Lecture 5: Taste (Ch. 8)
- 1/31 Lecture 6: Olfaction (Ch. 8)
- 2/5 Midterm-1 (covers lectures 1-5)
- 2/7 Lecture 7: Vision 1 (Ch. 9)
- 2/12 Lecture 8: Vision 2 (Ch. 10)
- 2/14 Lecture 9: Audition, Somatosensation (Ch. 11-12)
- 2/21 Lecture 10: Attention (Ch. 21)
- 2/26 Midterm-2 (covers lectures 6-10)
- 2/28 Lecture 11: Pain (Guest lecturer Dr. Matt Banghart)
- 3/4 Lecture 12: Motor (Ch. 13-14)

- 3/6 Lecture 13: Motivation, Emotions (Ch. 16,18)
- 3/11 Lecture 14: Sleep, Language (Ch. 19-20)
- 3/13 Lecture 15: Learning and memory (Ch. 24-25)
- 3/18 FINAL 7pm

Course Summary:

Date	Details	Due
	 11-Mar (https://canvas.ucsd.edu/courses/51503/assignments/754369)	
	 12-Feb (https://canvas.ucsd.edu/courses/51503/assignments/754360)	
	 13-Mar (https://canvas.ucsd.edu/courses/51503/assignments/754372)	
	 14-Feb (https://canvas.ucsd.edu/courses/51503/assignments/754370)	
	 19-Feb (https://canvas.ucsd.edu/courses/51503/assignments/754367)	
	 21-Feb (https://canvas.ucsd.edu/courses/51503/assignments/754371)	
	 22-Jan (https://canvas.ucsd.edu/courses/51503/assignments/754362)	
	 24-Jan (https://canvas.ucsd.edu/courses/51503/assignments/754363)	
	 28-Feb (https://canvas.ucsd.edu/courses/51503/assignments/754375)	
	 29-Jan (https://canvas.ucsd.edu/courses/51503/assignments/754361)	

Date	Details	Due
	 31-Jan (https://canvas.ucsd.edu/courses/51503/assignments/754365)	
	 4-Mar (https://canvas.ucsd.edu/courses/51503/assignments/754364)	
	 6-Mar (https://canvas.ucsd.edu/courses/51503/assignments/754374)	
	 7-Feb (https://canvas.ucsd.edu/courses/51503/assignments/754366)	
	 In-class assignment (1/17) (https://canvas.ucsd.edu/courses/51503/assignments/754358)	
	 midterm 1 (https://canvas.ucsd.edu/courses/51503/assignments/754368)	
	 midterm2 (https://canvas.ucsd.edu/courses/51503/assignments/754373)	