

BIPN 142

Systems Neurobiology

Winter Quarter 2023

Instructor: Jing Wang
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Office Hours:
Fridays, 11:30 AM – 12:30 PM

Instructor Assistant: Sameeha Rashid
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Office Hours:
Tuesdays, 11:15 AM – 12:15 PM
Mandeville study lounge
(next to the Art of Espresso)

Class Meetings: Tuesday & Thursday, 09:30 AM to 10:50 AM
CENTER 222

Sections: Begin in the SECOND week of class

Web Site: Canvas, with your UCSD e-mail username and password

Midterm Exams: January 31 and February 28 (in class)

Final Exam: Tuesday March 21, 8:00 – 11:00 AM, Location TBA

Textbooks: Required: Purves, D., et al., Neuroscience, 6th Edition. Sinauer, 2018 (Available at Course Reserves).

Prerequisites: BIPN 100 (Human Physiology I) or BIPN 140 (Cellular Neurobiology).

Sections: Sections are not required, but attendance will be recorded. Sections provide a forum for students to ask detailed questions, have in-depth discussions, and discuss problem sets. The precise format will be determined by the IAs. Participation in sections will be used to determine grades of students who are on the borderline between two class grades. Section participation will also make students eligible for an “A+” grade (without participation, the maximum grade is an “A”). For these purposes, participation is defined as active participation in discussions, not just attendance. Sections begin in the SECOND week of class.

<u>Section</u>	<u>Date</u>	<u>Time</u>	<u>Room</u>	<u>IA</u>
A01	Mon	8:00-8:50 AM	CENTER 217B	Sameeha Rashid
A02	Mon	9:00-9:50 AM	CENTER 217B	Sameeha Rashid

Grading Policy: There will be 2 **Midterm** and 1 **Final** exams, with each midterm and the final accounting for 25% and 30% of the course grade, respectively. **Final** exam will be inclusive of all materials. Exams will consist of short essay questions. In order for students to gauge their progress, 4 **Homework assignments** will be given during the quarter as indicated in the class schedule. Homework assignments will be graded, with each accounting for 5% of the course grade. Homework provides a means for students to check their understanding of the material throughout the course. **Section participation** will be used to boost grades of students who are on the line between two class grades (e.g., a student who just missed an “A” but who regularly participated in sections will be boosted to an “A” grade). For these purposes, participation is defined as active participation in discussions, not just attendance. Section participation will also make students eligible for an “A+” grade (without participation, the maximum grade is an “A”). Final letter grades may be curved, but the performance of the entire class will be considered.

- How to succeed Lectures. Lectures will cover more or less material than the textbook chapters. Therefore, lecture attendance (or access to really good notes) is absolutely essential. **You will not do well in this course if you stay home and read the textbook.** Asynchronous attendance requires prior approval by Dr. Wang. Required readings. You can save yourself a tremendous amount of work if you *read the required chapter(s) before attending lecture*. This lets you be actively engaged and think about the material during lecture, rather than waiting until just before the exam. *This is a much more efficient way to learn!* Problem Sets. The purpose is (1) to help you think in detail about important concepts, and (2) to let you gauge your grasp of the material well before the exams. You will get MUCH more out of the class if you take the problem sets seriously.
- Difficulty of Course: This is a difficult course that requires a high level of commitment to succeed. You will be expected to know a large number of basic facts, and will be required to synthesize these facts to form abstract concepts about brain function. You will not do well if you simply memorize the facts presented in the textbook or lecture.
- Supplemental Readings: Several cool topics that we don't have time to cover in class are introduced in supplemental readings which will be available on the course web site. Exams may have bonus questions related to the supplemental readings.
- Regrades: Requests for exam regrades must be made **in writing** to the instructor or to the IA **within one week** after the exam is returned. On a separate sheet of paper, please explain concisely why you deserve more credit. We cannot honor verbal requests for regrades. Only exams written in non-erasable pen will be eligible for regrades.
- Cheating: Cheating will not be tolerated. If you obtain or provide information in an exam or submit an altered exam for regrading, you will be given an F in the course and reported to the dean of your college. Exams will be closed-book and closed-notes. Please note that graded exams are routinely photocopied for comparison with submitted regrades.
- Missed exams: The only valid excuse for missing an exam is a medical reason or family emergency. Appropriate documentation is required. Make-up exams will be conducted orally at a time arranged with the instructor.

BIPN 142 Winter 2023 Class Schedule

10-Jan	1	Purv 1-8	Introduction to systems neurobiology
SENSORY SYSTEMS			
12-Jan	2	Purv 11, 28	Vision I: The eye and phototransduction
17-Jan	3	Purv 11	Vision II: Retinal circuitry and color vision
19-Jan	4	Purv 12	Vision III: Central visual processing
24-Jan	5	Purv 9-10	Somatosensory System I: Touch
26-Jan	6	Purv 10-11	Somatosensory System II: Pain and Proprioception
31-Jan			MIDTERM EXAM I (in class)
2-Feb	7	Purv 15	Chemical Senses
7-Feb	8	Purv 13-14	Hearing I: The cochlea
9-Feb	9	Purv 13-14	Hearing II: Central auditory processing.
MOTOR SYSTEMS			
14-Feb	10	Purv 16	Spinal Cord and Muscle
16-Feb	11	Purv 17	Control of Complex Movement
21-Feb	12	Purv 18	Basal Ganglia
23-Feb	13	Purv 19	Cerebellum
28-Feb			MIDTERM EXAM II (in class)
HIGHER FUNCTIONS			
2-Mar	14	Purv 31	Emotion and Social Bonding
7-Mar	15	Purv 28	Sleep, Arousal and Circadian Rhythms
9-Mar	16	Purv 21	Homeostasis: active regulation of internal states
14-Mar	17	Purv 8,25	Learning and Memory I: Simple forms of learning and development plasticity
16-Mar	18	Purv 8,30	Learning and Memory II: Hippocampal learning and LTP
15-Mar			FINAL EXAM 3:00 – 6:00 pm
			Homework assignment posted after class and due in 2 days at 10 pm