

BI 410/510: Neural Basis of Cognition (Winter 2019)

- **Instructor:** Santiago Jaramillo
- **Office:** LISB 215
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- **Class meetings:** MW 4:00pm-5:20pm, Lillis 111
- **Office hours:** Thursday 2-4pm (LISB 215)

- **Course Syllabus** (<https://canvas.uoregon.edu/courses/126930/assignments/syllabus>)
- **Textbook:** [Principles of Cognitive Neuroscience](https://global.oup.com/ushe/product/principles-of-cognitive-neuroscience-9780878935734?cc=us&lang=en&) (<https://global.oup.com/ushe/product/principles-of-cognitive-neuroscience-9780878935734?cc=us&lang=en&>) (by Purves et al) ISBN: 978-0-87893-573-4
 - Less expensive copies can be bought from other sellers (like Amazon).
- **Lecture slides** can be found in Files > lectures.
 - These SVG files **do not** open directly on Canvas. You need to download each file and open it with a web browser.
 - Use the arrow keys (left/right) to advance through the slides.
- **Presentation Instructions** (<https://canvas.uoregon.edu/courses/126930/pages/presentation-instructions>)
- **Quick introduction to Canvas** (<https://canvas.uoregon.edu/courses/26168>)

Course description

The course will examine the neural mechanisms responsible for cognitive processes such as attention, memory and decision making. We will focus on studies that use animal models to relate the activity of single neurons to cognition. The course is intended to bridge the gap between sensory physiology and cognitive neuroscience.

The format of the course includes lectures and activities that introduce each topic, followed by analysis of primary research literature. Students are expected to have a working knowledge of basic neuroanatomy and neurophysiology.

Course pre-requisites

BI353 – Sensory physiology, BI360 – Neurobiology, or equivalent.

Learning objectives

1. Gain a working knowledge of modern experimental approaches for studying cognition in animal models.
2. Identify the major gaps in our understanding of the neural mechanisms of cognition.
3. Become a critical reader of scientific research articles in systems neuroscience.
4. Develop the ability to formulate hypotheses about the neural basis of cognitive processes.
5. Become proficient at designing experiments to test hypotheses about the mechanistic bases of cognitive processes.
6. Learn to give a concise and compelling oral presentation that identifies a scientific question, proposes a hypothetical answer to this question, and lays out a novel strategy to test this hypothesis.

Grading:

Your grade will be based on your presentation, homeworks and exams as follows:

- Presentation: **20%**
- Homework #1: **20%**
- Homework #2: **20%**
- Final exam: **20%**
- Online quizzes, mini-homeworks and class participation: **20%**

Grade Percentage

A	90%-100%
B	80%-89%
C	70%-79%
D	60%-69%
F	59% and below

Class Courtesy

- Please arrive in class on time. Late arrivals distract the instructor and the other students.
- Please silence your cell phone during the class meeting times, and use your laptop only for class activities.
- Do not leave class early unless you have cleared it with the instructor in advance.
- I encourage you to ask questions if something presented in class was not clear or could not be heard.
- Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the quarter (or before) so that I may address you properly.

Open inquiry, freedom of expression, and respect for differences are fundamental to a comprehensive and dynamic education. We are committed to upholding these ideals by encouraging the exploration, engagement, and expression of divergent perspectives and diverse identities. Classroom courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Our classroom is a learning environment, and as such should be a safe, inclusive and respectful place. Being respectful also includes using preferred pronouns for your classmates. Disrespecting fellow students and combative approaches are not acceptable. Please make me aware if there are classroom dynamics that impede your (or someone else's) full engagement.

Academic Honesty

Group discussions outside of class are encouraged. However, all work submitted as part of this course must be your own. The use of sources must be properly acknowledged. Copying or paraphrasing information from any source *without citation* is plagiarism. For more information, see

<http://library.uoregon.edu/guides/plagiarism/students/index.html>

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All students will be expected to adhere to the University's guidelines on academic integrity as outlined in the Student Conduct Code: <https://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code> (<https://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code>). The consequences of academic dishonesty will be taken seriously (e.g., an 'F' in the course and a report to the Office of Student Conduct) and are noted on student disciplinary records. If you are in doubt regarding any aspect of these issues, please come and speak with me.

Students with disabilities

If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me. Please request that the Counselor for Students with Disabilities send a letter verifying your disability.

Campus resources to support your learning

If there are aspects of the instruction or design of this course that result in barriers to your participation, please notify me as soon as possible. Here are additional resources to support your learning:

- **Accessible Education Center:** The University of Oregon is working to create inclusive learning environments. If needed, you are encouraged to contact the Accessible Education Center <https://aec.uoregon.edu> (<https://aec.uoregon.edu>). If you are not a student with a documented disability, but you would like to share class issues that will impact your ability to learn, you are encouraged you to visit me during office hours so that we can strategize how you can get the most out of this course.
- **Tutoring and Learning Center (TLC):** Drop-in math and writing support in addition to tutoring, study skills support, and Class Encore. Located in the 4th Floor Knight Library (541) 346-3226, tlc@uoregon.edu
- **Counseling Center:** Call anytime to speak with a therapist who can provide support and connect you with resources. Located on the 2nd Floor of the Health Center(541)346-3227
- **Center for Multicultural Academic Excellence (CMAE):** its mission is to promote student retention and persistence for historically underrepresented and underserved populations. The center develops and implements programs and services that support retention, academic excellence, and success at the UO and beyond. Contact: cmade@uoregon.edu (<mailto:cmade@uoregon.edu>)
- **The UO Access Shuttle** is an on-campus ride service provided at no cost to students with conditions that limit mobility. More information and a sign-up form can be found on the parking & transportation department website: <https://parking.uoregon.edu/content/access-shuttle>.

Discrimination and Harassment

Any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment may seek resources and help at <http://safe.uoregon.edu> (<http://safe.uoregon.edu>). To get help by phone, a student can also call either the UO's 24-hour hotline at 541-346-7244 [SAFE], or the non-confidential Title IX Coordinator at 541-346-8136. From the SAFE website, students may also connect to Callisto, a confidential, third-party reporting site that is not a part of the university.

Students experiencing any other form of prohibited discrimination or harassment can find information at <http://respect.uoregon.edu> (<http://respect.uoregon.edu>) or <http://aaeo.uoregon.edu> (<http://aaeo.uoregon.edu>) or contact the non-confidential AAEO office at 541-346-3123 or the Dean of Students Office at 541-346-3216 for help. As

UO policy has different reporting requirements based on the nature of the reported harassment or discrimination, additional information about reporting requirements for discrimination or harassment unrelated to sexual assault, relationship violence, sex or gender based bullying, stalking, and/or sexual harassment is available at Discrimination & Harassment.

Safe Ride: 541-346-7433 ext 2. <http://pages.uoregon.edu/saferide> (<http://pages.uoregon.edu/saferide>)

Safe Ride is an assault prevention shuttle that works to provide free, inclusive, and accessible alternatives to traveling alone at night for UO students, faculty, and staff.

Reporting

The instructor of this class is a Student-Directed Employee. As such, if you disclose to me, I will respond to you with respect and kindness. I will listen to you, and will be sensitive to your needs and desires. I will not judge you. I will support you. As part of that support, I will direct students who disclose sexual harassment or sexual violence to resources that can help. **I will only report the information shared to the university administration when you as the student requests that the information be reported** (unless someone is in imminent risk of serious harm or is a minor). Please note the difference between 'privacy' and 'confidentiality.' As a Student-Directed Employee I can offer privacy because I am not required to report certain information to the university. However, I cannot be bound by confidentiality in the same way that a counselor or attorney is. Confidential resources such as these means that information shared is protected by federal and state laws. Any information that I as a student-directed employee receive may still be accessed by university or court proceedings. This means, for example, that I could still be called as a witness or required to turn over any related documents or notes that I keep.

Please note also that I am required to report all other forms of prohibited discrimination or harassment to the university administration. Specific details about confidentiality of information and reporting obligations of employees can be found at <http://titleix.uoregon.edu> (<http://titleix.uoregon.edu>).

Mandatory Reporting of Child Abuse

UO employees, including faculty, staff, and GEs, are mandatory reporters of child abuse. Child abuse pertains to individuals who are under the age of 18. This statement is to advise you that your disclosure of information about child abuse to the instructor may trigger my duty to report that information to the designated authorities. Please refer to the following links for detailed information about mandatory reporting: <https://hr.uoregon.edu/policies-leaves/general-information/mandatory-reporting-child-abuse-and-neglect> (<https://hr.uoregon.edu/policies-leaves/general-information/mandatory-reporting-child-abuse-and-neglect>).