PSY-410, Section 001
Neuroscience of Learning & Memory, Fall 2019
Giltner Hall, Rm 346
Mon & Wed, 8:00am-9:20am

Instructor Info:

Dr. Amy Arguello
Office: Giltner 213A
Email: arguell5@msu.edu
Office Hours: By appointment

Course Description:

We will discuss and evaluate 1) current theories of learning and memory, 2) human and animal research used to understand specific aspects of learning and memory, 3) the neurobiology underlying learning and memory- including synaptic plasticity, molecular, cellular and systems processes. Emphasis will be placed on critical analysis and discussion of primary literature and current methodologies used in the learning and memory field.

Supplemental Reading:

There is no required textbook for this course. Supplemental reading will be assigned and posted on D2L from these sources: 1) Primary literature, 2) The Neurobiology of Learning and Memory (2014) by Jerry W. Rudy, 2nd Ed, 3) Learning and Memory (2008) by Howard Eichenbaum, 1st Ed.

Grading:

1. Attendance and Participation: *Total possible points: 10.0*
   - Participation during discussions is an essential component of the class and attendance is mandatory.
   - There are 29 classes and you can earn 0.345 point/class, for a total of 10.0 points.

   Absences for ***more than 3 classes* will result in an automatic deduction of ***5 points from the final grade***, in addition to 0.345 for each missed class.

2. Weekly Article Summaries: *Total possible points: 10.0*
   - 1-page, double-spaced summary of articles to be discussed during class.
   - Five summaries (up to 2.0 points each) will be due.

3. Midterm Exam: *Total possible points: 20.0*
   - Short answer and essay questions based on lectures and primary literature discussed during class.

4. Group Presentation: *Total possible points: 15.0*
   - Groups (3-4 students) will choose from a list of articles and lead the analysis and discussion. *10.0 points*
   - Audience groups will develop 1-2 questions for post-presentation discussion. *5.0 points*

5. Neurobiological Mechanism Exam: *Total possible points: 10.0*
   - Short answer and essay questions based on primary literature discussed during class.

6. Final Paper Outlines: *Total possible points: 5.0*
   - 1-page, double-spaced outlines for the final paper. Four outlines will be due:
     Introduction (1.0 point), Results (1.0 point), Discussion (1.0 point), Future Directions (2.0 points).

7. Final Paper: *Total possible points: 30.0*
   - 10-page, double-spaced research paper: Does learning and memory occur in plants?
   - You will 1) Review and critically analyze two assigned articles, as per class discussions.
     2) Support your arguments based on the theories of learning and memory discussed in class.
     3) Design a novel experiment to test your hypothesis, using techniques discussed in class.

For all assignments, detailed rubrics will be posted on D2L and outlined in lecture slides. Lecture slides will be posted on D2L after class. It is essential that your D2L notification settings for this class are enabled.

Class Dates:

#	Date	Class Topic	Assignment
1	Wed 8/28	Class Intro, Syllabus & Survey	Syllabus, Survey
2 3	Mon 9/2 Wed 9/4	Holiday Theories of Learning and Memory	
4 5	Mon 9/9 Wed 9/11	Habituation & Sensitization Article Discussion + Tools to Analyze	Article posted on D2L Weekly Summary 1 due
6 7	Mon 9/16 Wed 9/18	Classical Conditioning Article Discussion	Article posted on D2L Weekly Summary 2 due
8 9	Mon 9/23 Wed 9/25	Instrumental Conditioning Article Discussion	Article posted on D2L Weekly Summary 3 due
10 11	Mon 9/30 Wed 10/2	Memory Consolidation & Reconsolidation Article Discuss	Article posted on D2L Weekly Summary 4 due
12 13	Mon 10/7 Wed 10/9	Cognitive Models Article Discussion	Article posted on D2L Weekly Summary 5 due
14 15	Mon 10/14 Wed 10/16	Mid-Term Review Mid-Term Exam	Research Papers Posted
16 17	Mon 10/21 Wed 10/23	Neurobiological Mechanism- Molecules Neurobiological Mech- Synaptic Plasticity	Introduction Outline Due
18 19	Mon 10/28 Wed 10/30	Neurobiological Mechanism- Systems Techniques in Neuroscience	Results Outline Due
20 21	Mon 11/4 Wed 11/6	Neurobiological Mechanism in Plants Group Discussion of Experimental Design	Discussion Outline Due Group Paper Options Posted
22 23	Mon 11/11 Wed 11/13	Neurobiological Mechanism Exam Group Work Day	Future Directions Outline Due
24 25	Mon 11/18 Wed 11/20	Group-led Discussion #1 Group-led Discussion #2	Introduction Due
26 27	Mon 11/25 Wed 11/27	Group-led Discussion #3 Group-led Discussion #4	Results Due
28 29	Mon 12/2 Wed 12/4	Group-led Discussion #5 Group-led-Discussion #6	Discussion & Future Directions Due *Return Comments, Potential to Revise*
	12/9-13 FINALs		Final Paper Due 12/9

Grades will be assigned on the following scale:

90-100% = 4.0
85-89% = 3.5
80-84% = 3.0
75-79% = 2.5
70-74% = 2.0
65-69% = 1.5
<60% = 0.0

Additional Important Information:

Academic Honesty: The Spartan Code of Honor states, "As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at MSU, continuing the endeavor to build personal integrity in all that I do." Plagiarism or cheating may result in a failing grade on an assignment or in the course. If you have any questions on this topic, please make an appointment so that we can address your questions. You can follow these useful links for more details:
https://www.msu.edu/unit/ombud/academic-integrity/index.html
https://www.msu.edu/unit/ombud/academic-integrity/plagarism-policy.html

Professionalism in Class:
Technology: This course is an upper-level, discussion-based class. As such, please respect both your instructor and fellow classmates by silencing all electronic devices or choosing a seat toward the back of the class.

Disruptive Behavior: Article 2.3.5 of the Academic Freedom Report (AFR) for students at MSU states: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.3.10 states that "The student has a right to scholarly relationships with faculty based on mutual trust and civility." General Student Regulation 5.02 states: "No student shall.... interfere with the functions and services of the University such that the function or service is obstructed or disrupted." Students whose conduct adversely affects the learning environment may be subject to disciplinary action via the Student Faculty Judiciary process.

Missed Classes or Exams: Make-up exams will only be given in case of: 1) a documented medical or family emergency, or 2) a documented scheduled conflict, such as a religious holiday or required participation in a university-sanctioned event. The instructor must be notified of the above-mentioned conflict by email as soon as possible, otherwise a grade of 0.0 for that exam will be earned. For missed classes with no official documented excuse, 0.345 point will be subtracted as noted in the "attendance and participation" section.

Limits to confidentiality: Class materials are generally considered confidential pursuant to the University's student record policies. However, students should be aware that University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others. As the instructor, I must report the following information to other University offices if you share it with me: 1) suspected child abuse/neglect, even if maltreatment happened when you were a child, 2) allegations of sexual assault or sexual harassment when they involve MSU students, faculty or staff or 3) credible threats of harm to oneself or to others. These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual. If you would like to talk about these events in a more confidential setting you are encouraged to make an appointment with the MSU Counseling Center (https://www.counseling/msu/edu/students).

Accommodations for Students with Disabilities: MSU is committed to providing equal opportunity for participation in all program, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at https://www.rcpd/msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation (VISA) form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date. Requests received after this date may not be honored.