

PSYCHOLOGY 209H BRAIN AND BEHAVIOR

Fall 2019
Room 101 Giltner
M/W 10:20-11:40

Instructor:

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Readings

- (1) "The Minds Machine, Foundations of Animal Behavior", by NV Watson and SM Breedlove, 2016, 2nd Edition, Sinauer Associates. It is available at the Student Book Store
 - (2) Additional readings will come in the form of class handouts, PDFs, and Web sites
- Full details of the readings and when they need to be read are available on D2L.

Extra: There is a companion Web site associated with your textbook for those of you interested in learning more: <http://www.biopsychology.com/news/index.php?book=MM>. It's a great way to find out about the newest research findings on topics in behavioral neuroscience that you may be especially interested in. [These readings are not assigned]

Objectives

This course will cover a range of issues related to the biology of behavior, including the structure, function, and evolution of the brain. First, we will introduce some basic structures of the nervous system and discuss how single cells function within the networks that ultimately enable us to think, feel, and behave the way that we do, and we will consider some issues related to evolution of behavior and the brain. Then, some principles of sensory systems will be addressed, and we will move on to the biology of sex and reproductive behaviors, sleep and rhythms, aggression, learning, memory, language and cognition. We will also learn about some of the ways that problems can arise in neural systems and in the behaviors and mental processes that they regulate. A range of social issues that can be informed by a better understanding of the nervous system will be discussed, and sometimes debated. The overarching goal is to provide you with a basic understanding of relationships between the nervous system and behavioral and mental states, and how some of these issues can be studied. Another goal is to engage you in critical thinking about research, and about some of the social/ethical issues related to behavioral neuroscience.

SCHEDULE

** Indicates days devoted to discussion of special topics (described below).

August 28 Introductions
 Chapter 1

September 2 UNIVERSITY HOLLIDAY-NO CLASS

- September 4 Cells and structures-1
Chapter 2
- September 9 Cells and structures-2
Chapter 2
- September 11 **Looking into a living brain: What can neuroimaging tell us, and how should and shouldn't it be used?
Chapter 2 + Reading List
- September 16 Neurophysiology
Chapter 3
- September 18 The chemistry of behavior
Chapter 4
- September 23 **The chemistry of behavior
Chapter 4 + Reading List
- September 25 Evolution of the brain and behavior
- September 30 **EXAM 1** [Covers material from August 28 through September 25]
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- October 2 Somatosensory systems
Chapter 5
- October 7 Hearing and tasting
Chapter 6
- October 9 Hormones and sex: Basics
Chapter 8
- October 14 **Intersexuality and gender identity
Chapter 8 + Readings List
- October 16 **Sexual orientation
Chapter 8 + Reading List
- October 21 Homeostasis
Chapter 9
- October 23 Biological rhythms
Chapter 10
- October 28 **EXAM 2** [Covers material from October 2 through October 23]
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- October 30 Special guest: Dr. Susan Kendell, MSU Biological Sciences Librarian, on how to obtain the most reliable information and how to identify the least reliable information
- November 4 Sleep I
Chapter 10
- November 6 Sleep II
Chapter 10
- November 11 **Emotion and aggression
Chapter 11 + Reading List
- November 13 Psychopathology
Chapter 12
- November 18 **Psychopathology and psychosurgery
Chapter 12 + Reading List
- November 20 **Memory and the case of HM
Chapter 13 +Reading List
- November 25 Memory and learning: back to some basics
Ch. 13

- November 27 Attention and consciousness
Chapter 14
- December 2 Language and hemispheric asymmetry
Chapter 15
- December 4 **EXAM 3** [Covers material from November 4 through December 2]

December 11 PAPERS are due by 5:00 p.m.

NOTE: THERE WILL BE NO FINAL EXAM

Review sessions will be held in room 221A Giltner prior to each of the 3 exams:

September 27, 2:00-3:00

October 24, 3:00-4:00

December 2, 3:00-4:00

ASSIGNMENTS AND GRADES

Grades will be based on:

Class discussion and commentaries (6 x 6 points)

Seven class meetings will be devoted primarily to discussions of controversies associated with a topic in behavioral neuroscience and to related readings that have been assigned for that day and need to be read before class begins; these sessions are indicated by ** on the schedule and on the reading list. Before coming to class on each of these days you must **read all of the assigned articles/sites and write a short (1/2-1 page) commentary about each of them**; you also need to read the chapter of the textbook assigned for that day. Some of the articles/web sites are written by people that have a strong point of view on the issue in question, and some might have arguments/interpretations that may be flawed, (and some may simply not provide information that would be needed to assess the presentation of issues in them). It is your job to read them critically before class begins. Your commentaries must be handed in at the **beginning** of the associated class period, you **must** do this in person, not through a classmate or by email. The commentaries should spell out some the reactions that you have to the reading(s) (and it should be clear from the commentary that you have done the reading). You can earn 2 points for the commentary; more specifically you will be given 2 points if it is clear from the commentary that you have put some thought into the issue, 1 point if it is carelessly written/thought out, and 0 if you have not turned in a commentary.

On discussion days the class will begin with a very short lecture and then some questions will be posed for you to focus your discussions on. We will begin with dividing into smaller groups and you will be given approximately 15-30 minutes to go over the issues. These discussions should address the nature of the controversy and the behavioral neuroscience related to it. Sometimes each group will be asked to develop a case in support of one side or another of a controversy. If there is time, the class will then reconvene as a whole and we will have a general class discussion during which the different groups present their positions and the reasoning behind them. **You can earn 4 points for participating in the discussion.**

[Note: Everyone can receive credit for 6 of the 7 class periods devoted to discussions. It will be impossible to make up credit for participating in a class discussion, thus, if you have to miss class for some reason (e.g. if you are sick), that will be the one that is dropped and you can still receive full credit for this assignment via the other 6 discussion periods.]

Paper (88 points)

Your paper should focus on a controversy related to research in behavioral neuroscience. For example, what implications do research findings in this field have, if they have any, for a related social policy or regulation, or for laws or ethical issues more generally. **The assignment is described in detail in a rubric posted on D2L**, but here are the four key components that your paper must include:

1. Introduction to the nature of the controversy
2. Critical review of key scientific data on the **biology** relevant to the issue
3. Discussion of whether and how these data have any implications for the controversy
4. Reference list

The paper should be submitted via a drop box that will be set up on D2L.

Exams (3 x 92 points)

There will be three exams in this course. Each will test your knowledge and comprehension of material covered in class, assigned readings and Web sites during the dates indicated on the schedule. The format will be varied but most questions will ask for short answers, essays (1/2-1 page) or definitions. You may also be asked to draw or interpret a graph, or put labels on a figure. Study questions to help with preparation for exams will be provided at least 1 week before the exam. A make-up exam (different from the primary one) will be granted only in the case of a documented medical, religious, or legal reason for missing the exam.

NOTE: THERE WILL BE NO FINAL EXAM.

Overall Grade

You will have an opportunity to earn 400 points in this course:

276	Exams (3 exams x 92 points)
36	Participation in group discussions (6 discussions x 6 points)
88	Paper
400	TOTAL

Final course grades will be determined according to a standard grading scale: $\geq 90\%$ total points=4.0, 85-89%=3.5, 80-84%=3.0, 75-79%=2.5, 70-74%=2.0, 65-69%=1.5, 60-64%=1.0 and $<60\%=0$.

SOME ADDITIONAL ISSUES

General

I am here to help you learn and am **very** happy to discuss with you a host of issues related to the brain, behavior and biological psychology more generally, including material covered in class or in the readings, as well as questions you might have that go beyond them. I would also like to help anyone that is having difficulties with the class and that might like general advice about how to study more effectively. So, please let me know if you would like to get together to talk!

D2L

We will use the web-based D2L platform as the primary means of communicating outside of the classroom, and readings, study questions and some additional items will be posted there. **Abbreviated** versions of the Power Point files used for lectures will be posted on D2L during the week following each lecture. **Do not rely on these to prepare for your exam! More generally, please remember that this is not an online course.** It is taught with the assumption that students attend class. Without attending you would have a very hard time learning the material and writing good answers to exam questions. PP files will be posted to help remind you about what we cover in class, not to replace what we cover in class. The PPs used here generally will not have a great deal of text; they are primarily intended to provide visuals that help make a point more clearly. It

should also be noted that some issues may come up in class that don't end up in an email or on D2L (e.g. answers to questions, opportunities for extra credit...etc.).

Questions about grades

If you have a disagreement about how a question on an exam has been graded and would like that concern to be addressed please bring it to my attention within one week of the day that you received the score on the exam. Specifically, (1) return the exam to me and (2) send me an email describing why you believe that there was a mistake, i.e. why you believe that your answer was correct. I will go over it and arrange to talk to you about it and if I have made a mistake I will correct it.

Classroom conduct

Please treat other members of the class with courtesy and respect. **Cell phones must be turned off** before class starts and put away unless you have been explicitly told to access the internet. Texting, emailing, game playing, and web surfing during class are counterproductive to learning and may interfere with others, and it can be rude. I reserve the right to confiscate for the duration of class any device that I feel is affecting my ability to teach effectively regardless of whether you think it is not distracting you or others. Try to leave the outside world behind when class begins, and be fully present!

Observing a major religious holiday

You may make up course work missed in order to observe a major religious holiday if you make arrangements one week in advance.

Honor and ethics

"The Spartan Code of Honor" is a very nice item that MSU students have written for each other: "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 Michigan State University, continuing the endeavor to build personal integrity in all that I do."

If you would like to understand some of the issues related to that "code of honor" in the context of student papers and the possibility of plagiarism you can go to this site:

<https://msu.edu/unit/ombud/academic-integrity/plagiarism-policy.html>. One of the things indicated on that site is that students are the ones responsible for knowing what plagiarism is (beyond the fact that it's bad). The consequences of it may be severe (e.g. failing the course...etc.) and instructors are obligated to inform the University Office of the Registrar of the event. If you have questions about this just let me know, or visit this site: <http://splife.studentlife.msu.edu/regulations/general-student-regulations>

Limits to confidentiality

You 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 based on external legal obligations, or that relate to 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:

- Suspected child abuse/neglect, even if this maltreatment happened when you were a child
- Allegations of sexual assault or sexual harassment when they involve MSU students, faculty, or staff
- Credible threats of harm to oneself or to others

These reports may lead to 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 or not.

Accommodations for Disabilities

Accommodations for Students with Disabilities: Michigan State University is committed to providing equal opportunity for participation in all programs, 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 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.**