



PSY330: Foundations of Behavioral Neuroscience

What do MRIs tell us about if someone is to blame for a crime? What is the science behind happiness and, perhaps more importantly, fear? How can someone think they are blind yet still be able to see?

We have billions of neurons in our brain that underlie everything we do, from dreaming to falling in love, yet we know very little about how our brain performs our daily functions. This class is designed to help you understand how our brain causes our behavior and to (hopefully) ignite your interest in what we call neuroscience.

I specifically want you to appreciate the complexity of the brain and how it relates to the complexity of behavior. The specific learning objectives of the course are below. At the end of the semester, you will be able to do the following:

1. Identify the structure and function of the major parts of the nervous system at a cellular and systems (functional neuroanatomy) level
2. Describe the process of action potentials
3. Describe the process of neurotransmission
4. Identify the behavioral function of major brain chemical systems
5. Discuss basic research in behavioral neuroscience
6. Relate biological processes to everyday behavior

Format:

This class is face-to-face and I hope to see you every Tuesday and Thursday. The structure of this class is set up to keep your attention, as psychological research says our attention span is only 8 minutes. I will present information, we will discuss it together, and you will have daily activities to rehearse and apply the information. This should help you retain the information and maybe make it more enjoyable to learn. You will also have a daily Kahoot to test your knowledge at the end of each class, which will never hurt you but can help.

The way I set up this class is based on research suggesting that these methods will help you succeed, and helping you succeed is my job as your professor. Your job as a student is to show up, participate to the best of your ability, and put in the time and effort to understand the material. I know that this information may be a little unfamiliar (read: terrifying) to some and that's fine- you will be able to understand it by the end!

The Class:

Winter 2025

Sec 01:

TuTh 2:30-3:45 pm Au Sable 2132

Sec 04:

TuTh 11:30-12:45 pm Lake Michigan 114

Sec 05:

TuTh 10-11:15 am Au Sable 1320

Pre-req: PSY101

The Professor:

Dr. Natasha Swalve

swalven@gvsu.edu

Student Hours:

2137 Au Sable

M: 12-2 pm (on Zoom)

Tu/Th: 1:20-2:20 pm (in person)

No need to set up an appointment- just stop in via the zoom link or my physical office! If these times don't work, feel free to email me to set up a different time.

The Book:

Carlson & Birkett: Foundations of Behavioral Neuroscience. 10th edition (but can use older). Pearson. 9780137533619

This is offered through the GVSU save program (details on BB Ultra) but feel free to use a physical version or older version!

Points/Grades:

Exams: 400 points (100 pts/test)

Reflection Papers: 100 pts (10 pt/reflection)

Article Reflections: 50 pts (10 pts each)

In-Class Activities: 44 pts (2 pts each)

Total: 594 points

I will round your grade up. You can determine your grade by counting your earned pts and dividing by the total.

A: 94-100% **A-:** 91-93%

B+: 88-90% **B:** 84-87%

B-: 81-83% **C+:** 78-80%

C: 74-77% **C-:** 71-73%

D+: 68-70% **D:** 60-67%

F: 0-59%

This syllabus is subject to updates and changes throughout the semester

Class Policies & Expectations

Exams:

You will take 4 exams throughout the semester listed on the schedule, with each one being based on a section of the class. They will be a combination of multiple-choice, short answer, and essay questions that will be taken in class on paper (old school!). The goal of these exams is to have you apply the material you've learned, not simply repeat it. If you're going to miss a test due to an excused circumstance, let me know before the test itself- I won't allow make-up exams if you notify me after the test has started (even by a minute) because it's not fair to other students. I give feedback quickly for your benefit, so all make-ups or otherwise alternatively scheduled exams need to be taken before the next class period. The final exam will be cumulative, with a shorter section for the last bit of material and sections from tests 1-3. If you do better on any part of the final than you did on the previous section, I will replace the grade from the previous exam with the new score.

Assignments:

The goal of this course is to get you to understand how the material relates to your own life. You will be listening to outside sources and reading scientific articles discussing these topics and then reflecting on that information. The article assignments need to be read by the night before that class session so that we can discuss them then. All assignments can be turned in late- you will lose 50% of the original grade if they're late by even a minute but I will accept them until the last official day of class. If you need an extension, let me know before it's due! More information on these assignments is posted on BB Ultra.

Activities:

There will be daily activities in class. These will count towards your daily participation in class so make sure to show up! You will also be tested in Kahoots daily to help reinforce your knowledge. If you're in the Top 3 of the Kahoots at the end of each *section*, you will get 2 points extra credit. These activities are here to help you comprehend the material in low stakes ways.

Emails:

I typically email back very quickly but, like you, I have a busy schedule. My guarantee is that I will respond in 48 hours. If something is an emergency or urgent, put that in the subject line so that I know to try to get back to you sooner (if possible). I will try to respond as soon as I can but there are no promises that it will be done quickly, especially not during business hours, so keep that in mind when studying for tests and doing assignments.

Technology:

Everything required for this class will be posted on Blackboard Ultra, which means that you will need a computer and internet. If you're struggling with having access to a regularly working laptop, please visit [this site](#) for potential help. I use Zoom for virtual meetings, and you will be expected to turn things in in either .doc or .pdf form. GVSU provides access to [Microsoft Office 365](#) and the [Zoom business license](#) for free.

Attendance:

I hope that you will come to every class, and your grade depends on you showing up daily. **You cannot do the in-class activities after that class period in which they're due and you cannot do that class's activity if you missed class that day.** I will drop the two lowest activities, so you can miss up to two days without missing any points for any reason. You do not need to inform me that you're going to be missing class- those points will automatically be dropped at the end of the semester. If you're going to miss class for a longer period of time (e.g. an extended sickness, athletics, etc.), then you should let me know and we will figure out a plan to stay on track.

Academic Integrity:

I understand that you don't come to class expecting to commit academic dishonesty, so make sure to take a look at what constitutes it [here](#). Common examples include using ChatGPT or other AI including Grammarly to complete assignments, presenting work from other students as your own, or taking information directly from others without appropriate citations. I want to read your original thoughts, so everything needs to be in your own words. If you do cheat, you will receive a failing grade for that activity and other consequences as laid out in GVSU's policy. This can be up to receiving an F for the class. You will also be reported to the Office of Student Conduct and Conflict Resolution.

Accommodations:

If you need accommodations, the office of Disability Support Resources is here to help, and I am as well! I will need a memo outlining accommodations from them first to work with you to make sure we're abiding by all of the federal/state laws. Please contact the Disability Support Resources office by calling 331-2490 or emailing dsrgvsu@gvsu.edu for additional support. My goal is to have you come out of this class with a thorough understanding of the material, so I want to work with you to achieve that. All information related to accommodations will be confidential. If you wish to speak with me about specific needs, I'm always available via email or in person, depending on your comfort level.

Psych Friends Peer-to-Peer Mentors

Psych Friends mentors are upper-level psychology and behavioral neuroscience students who are trained to provide support in many areas, such as: effective studying and time management techniques, exam preparation and reflection skills, understanding the PSY and BNS major requirements, potential jobs and careers in the field, the process of applying for graduate school, and how to maintain physical and mental health as a student. Visit <https://www.gvsu.edu/navigate> to schedule an online or in-person meeting today!

This course is subject to the GVSU policies listed [here](#).

Course Schedule

Date	What We're Talking About	Listen to/Watch This	Read This	Turn This In
1/7 Tu	Introduction		Ch. 1.1 (Nature of Beh. Neuro)	Pre-Class Survey
1/9 Th	Neurons	Lost and Found	Ch. 2.1 (Cells of the Nervous System)	Reflection #1 (due Sun)
1/14 Tu	Neurotransmission		Ch. 2.2 (Com. Within a Neuron)	
1/16 Th	Neurotransmitters	Wonder What's Living In You?	Ch. 2.3/4.3 (Com. Between Neurons/Neurotransmitters & Neuromodulators)	Reflection #2 (due Sun)
1/21 Tu	Neuroanatomy		Ch. 3 (all) Maguire Paper	Daily Article Response 1
1/23 Th	Methods	Face Blind	Ch. 5 (all)	Reflection #3 (due Sun)
1/28 Tu	Test 1			
1/30 Th	Hearing	Colors	Ch. 7.1 (Audition)	
2/4 Tu	Vision		Ch. 6 (all)	Reflection #4 (due Sun)
2/6 Th	Mechanical Sense		Ch. 7.2/7.3 (Vestibular System/Somatosenses) Danziger Paper	Daily Article Response 2
2/11 Tu	Chemical Senses	Taste	Ch. 7.4/7.5 (Gustation/Olfaction)	
2/13 Th	Temperature			Reflection #5 (due Sun)
2/18 Tu	Thirst/Hunger		Ch. 13 (all) Vocks Paper	Daily Article Response 3
2/20 Th	Test 2			
2/25 Tu	Stress		Ch. 17.2/17.3 (Stress/PTSD)	
2/27 Th	Emotions	Dr. Money and the Boy with No Penis	Ch. 11 (all)	Reflection #6 (due Sun)
3/2- 3/7	SPRING BREAK			
3/11 Tu	Sexual Differentiation	Fronads	Ch. 10.1/10.2 (Sexual Development/Hormonal Control)	Reflection #7 (due Sun)
3/13 Th	Reproduction		Ch. 10.3-10.5 (Neural Control, Sexual Orientation/Parental Beh.) LeVay Paper	Daily Article Response 4
3/18 Tu	Neuroscience in Society			
3/20 Th	Sleep	Sleep	Ch. 9 (all)	Reflection #8 (due Sun)
3/25 Tu	Drugs and Addiction		Ch. 4.1/4.2 (Principles/Sites of Drug Action)	

3/27 Th	Test 3			
4/1 Tu	Learning and Memory	Music on the Brain	Ch. 13.1/13.2/13.6 (Overview/Stimulus-Response/Long-Term Potentiation)	Reflection #9 (due Sun)
4/3 Th	Language		Ch. 14 (all) Bella or Fedorenko Paper	Daily Article Response 5
4/8 Tu	Mood Disorders		Ch. 16.2-16.4 (Affective Disorders/Anxiety Disorders/OCD)	Reflection #10 (due Sun)
4/10 Th	Neurological and Developmental Disorders		Ch. 15 (all); Ch. 17.1 (Neurodevelopmental Disorders)	
4/15 Tu	Schizophrenia		Ch. 16.1 (Schizophrenia)	
4/17 Th	Review for Final			
4/21 WEEK	FINALS WEEK: Cumulative Final Always in the same classroom as your normal class- just a different time			