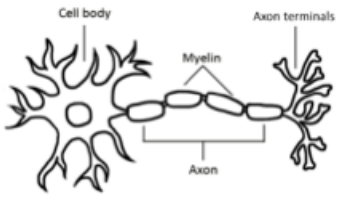
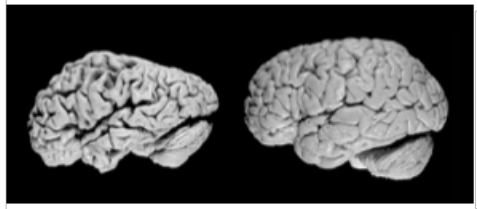
PSY330: Foundations of Behavioral Neuroscience





Class Description:

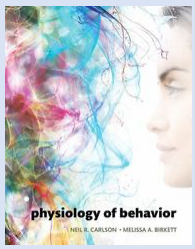
Did you know we use 100% of our brains? That human brains aren't fully developed until around 25 years old? This class explores how our nervous system allows us to successfully interact with our environment and what can happen due to damage or disease.

Course Objectives:

- Identify the structure and function of the major parts of the nervous system
- Describe the process of action potential
- Describe the process of neurotransmission
- Identify the behavioral function of major brain chemical systems
- Discuss basic research in behavioral neuroscience
- Relate biological processes to everyday behavior

Course Requirements:

- Prerequisite: PSY 101
- Carlson Physiology of Behavior 12th edition Textbook (We will use this every week). ISBN:0134080912
- Technology Requirements
- MS Office
- Zoom
- Panopto



Class Meeting Times:

Tues & Thurs 8:30am – 9:45am

Exams:

- Progress Test 1: Thursday 2/18/21
- Progress Test 2: Thursday 3/25/21
- Final Exam: Thursday 4/29/21 8am – 9:50am

Please be sure you have uninterrupted time and internet for online exams

Instructor: Dr. Elizabeth Flandreau, PhD (she/her) flandree@gvsu.edu

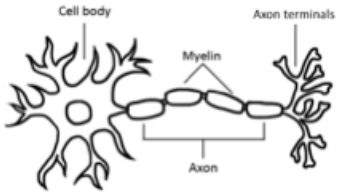
Virtual Office Hours:

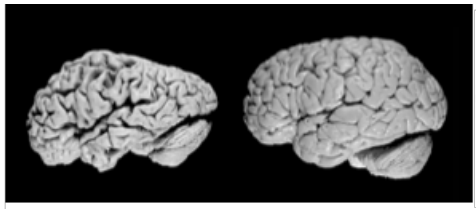
Individual Appointments Tues 12 – 2pm

Group Review Session Sun 3pm

About the instructor: Dr. Flandreau has a BA in biology from Lawrence University and a PhD in neuroscience from Emory University. She worked as a postdoctoral fellow at the Salk Institute and UCSD prior to joining GVSU in 2015. Her research examines interactions between stress and diet on behavioral, endocrine, and gene-expression outcomes in rodents.

Dr. Flandreau's full publication list.




Course Structure: Responsibilities

PREPARE

Before Class:

Weekly Modules

- Lecture Videos
- Textbook Reading
- Reading Quiz
- Team Meetings

* Extra Help: Discussion boards

PRACTICE

During Class:

- Q&A with professor
- Group activities to apply your knowledge
- Class discussions

REVIEW

After Class:

- Review Quiz
- Complete Team Homework (see schedule)

* Extra Help: Discussion Boards; Office Hours

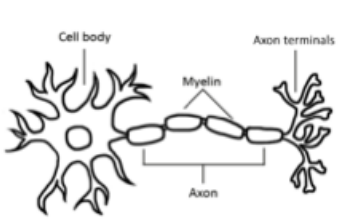
Attendance & Contribution *are expected and rewarded.*

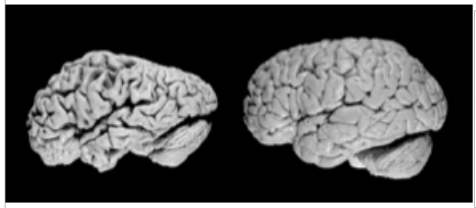
Synchronous class meetings offer new ways to understand the materials through polls, activities, and discussions. Class meetings are designed so that your learning is an active process to increase knowledge retention. In-class time will also be used to work on team assignments. I am unable to record these meetings. You do *not* need to inform me if you must be absent but should contact your team in advance and request notes. If you are regularly unable to attend full class meetings, please set up a meeting to discuss.

Grading: Total scores on blackboard do not reflect your official grade; this column is turned off to avoid confusion. Final grades are calculated according to the rubric below, with the standard letter grade cutoffs (A: ≥ 93, A- ≥ 90; B+ ≥ 87; B ≥ 83; B- ≥ 80; C+ ≥ 77; C ≥ 73; C- ≥ 70; D+ ≥ 67; D ≥ 60)

Start Here & Weekly Modules:	175 Points	35% *(lowest scoring module is dropped)*
Team Activities & Contribution:	115 Points	23%
Midterm Exams (n = 2):	110 Points	22%
Final Exam:	100 Points	20%
TOTAL	**500 Points**	**100%**

Details in weekly module folders on BB




Resources for Students

Getting Help: I encourage everyone to attend virtual office hours, visit the student academic success center and seek out a tutor through the tutoring center or *Psi Chi*.

Office Hours provide one-on-one access to your instructors and can be used to ask questions about course content, grades, academic and career choices, or just get to know each other a little better as humans, which is a tad more challenging for remote courses compared to face-to-face. https://calendly.com/flandree/flandreau-office-hours

Library Resources: The GVSU library has additional resources related to understanding and producing scientific writing as well as important information on how to cite sources and avoid plagiarism. https://www.gvsu.edu/library/km/

Official Accommodations: Please work with DSR (https://www.gvsu.edu/dsr/) and communicate with me (preferably during the first week of the semester) to make sure your needs are met in this course.

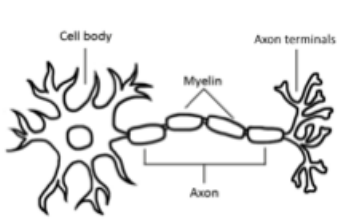
Health, Safety, & Academic Success

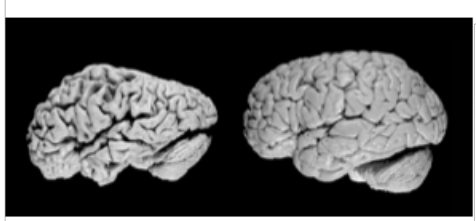
We all have different learning preferences and deal with different personal situations, some related to the COVID-19 pandemic and social injustice. Many of us are dealing with childcare, eldercare, or other requirements. No one can reach their greatest academic potential if basic needs are not being met.

Please visit the following sites for information on resources related to access to food, housing, internet and software and mental health.

- https://www.gvsu.edu/coronavirus/resources-for-students-22.htm
- https://www.gvsu.edu/financialaid/financial-hardship-requests-226.htm
- University Counseling Center
- https://www.gvsu.edu/care/
- https://www.gvsu.edu/inclusion/remote-services-156.htm

If there are aspects of this course that prevent you from learning or exclude you, please let me know ASAP so that we can work together.




Important GVSU Policies

Expectations of Inclusion: The purpose of this course is to learn neuroscience. Please treat your classmates and instructors with respect in person, on zoom and in email. In particular, it is unacceptable to judge others by gender, race, or for any other reasons. If you have any concerns, please contact me or the GVSU division of inclusion and equity (616) 331-3296)

- Please review GVSU's policy on Anti-Racism and Title IX

Expectations of Integrity: Earning a degree from GVSU means you achieved knowledge, skills, and abilities worthy of that degree. Please do not short-change your education through cheating, plagiarizing, or lying. Instructors are required to report incidents of academic integrity violations.

- Please Review GVSU's requirements for academic integrity: https://www.gvsu.edu/osccr/academic-integrity-14.htm.

If you have any questions about these expectations, please ask me!

How to meet the integrity standards for GVSU

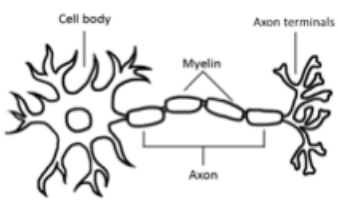
Make sure you know which resources you're allowed to use

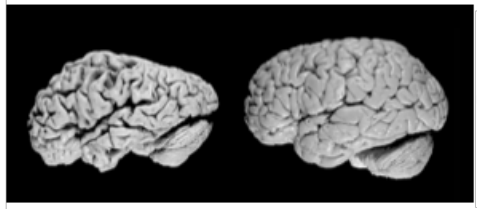
- Resources you can (and should!) use for homework:
  - Your teammates (weekly meetings and discussion boards)
  - Your classmates (online discussion boards)
  - Your textbooks (with proper in-text citations)
  - Your instructor (office hours, discussion board)
- Resources you can (and should!) use for quizzes and exams:
  - Your own personal notes written by you (see "own voice standard" for additional instructions).

Always Cite your sources

- In-Text and end of text citations should be in APA 7th Edition format and should be used when you've gained ideas, understanding, words, or definitions from a source

Complete the "Start Here" module, which includes direct instruction on academic and scientific integrity.




Important Course Policies

Assignment Submission Criteria: Attachments should have an easily identifiable name (e.g. StudentNameHomeworkNumber). All assignments, quizzes, and exams must be free from plagiarism and must meet the "own voice" standard (described below). Names and team number should be on the top of each assignment and documents should be constructed in an easy-to-read format, this leaves room for flexibility but if you prefer more structure, please use APA format.

Flandreau Own Voice Standard: This class requires integrating content across topics and demonstrating knowledge through application. You will be asked to "predict" an outcome or "explain" a process. Correct responses require using vocabulary flexibly and with meaning. To this end, *everything* you submit must be in your own voice. Direct quotations and paraphrasing are incompatible with this standard. Additional info is in the "Start Here" module on BB. Student will have an opportunity for a replacement assignment and grade for a first own-voice violation. Additional submissions that do not meet this standard cannot be considered for credit.

How to meet the "Own Voice" Standard:

- Take careful notes: identify the source of the notes at the top of the page (e.g. Carlson, NSO, Wikipedia); do not copy down words or phrases directly from the source.
- Do not use notes while you craft your answers. Being able to speak from memory is a great way to demonstrate to yourself that you've mastered the content and are using your own voice.
- Read your answers aloud. Does it sound like something you would say? Do you understand every word you've written? If not, you likely haven't mastered the content and don't meet the standard.
- Google your answers: Does something come up that looks similar to what you (or a teammate) have written? If so, you likely haven't answered the question correctly and not met the standard.
- Ask Questions: Are you unsure what a question is asking? Unclear about how to approach the topic? Use the "Clarification Questions" discussion board. Is the topic perplexing to you? Use the "Content Questions" discussion board. Is the discussion board not helping? Make an office hours appointment with Flandreau!

Part 1: Course Schedule

Detailed module requirements including reading guides and individual and team assessments are found in the weekly modules on BB.

WEEK & TOPIC	DATE	DAY	ZOOM Meeting	Deadlines
Week 1: Syllabus, Technology Requirements, Secrets to success, Neuro Hit or Myth, Bio Basics, What is a Neuron	1/18/21	Monday		
	1/19/21	Tuesday	START Here Q&A	
	1/20/21	Wednesday		Week 1 reading and required videos
	1/21/21	Thursday	Quiz 1 + Bio Basics	
	1/23/21	Saturday		Week 1 Module *Optional Extra Credit Pre-Test*
Week 2: Neuroanatomy	1/25/21	Monday		
	1/26/21	Tuesday	No Class- work on "Start here" and Week 2 module videos	
	1/27/21	Wednesday		Week 2 Reading & Required Videos; CATME Team Survey
	1/28/21	Thursday	Quiz 2 + Neuroanatomy	
	1/30/21	Saturday		START Here Module Deadline Week 2 Review
Week 3: Ions, Driving Forces, Vm, Nernst, Ion channels, AP, Myelin	2/1/21	Monday		
	2/2/21	Tuesday	Meet your team	
	2/3/21	Wednesday		Week 3 reading and required videos
	2/4/21	Thursday	Quiz 3 + Communication within neurons	
	2/6/21	Saturday		Week 3 Review
Week 4: Synaptic Transmission	2/8/21	Monday		
	2/9/21	Tuesday	Team Homework 1	
	2/10/21	Wednesday		Week 4 reading & required videos
	2/11/21	Thursday	Quiz 4 + Communication between neurons	
	2/13/21	Saturday		Week 4 Review **Team Homework 1**
Week 5: Test 1 (Neuroanatomy; Communication within and between neurons)	2/15/21	Monday		
	2/16/21	Tuesday	Catch Up Q&A	
	2/17/21	Wednesday		
	2/18/21	**Thursday**	**Progress Test 1**	
	2/20/21	Saturday		

Part 2: Course Schedule

Detailed module requirements including reading guides and individual and team assessments are found in the weekly modules on BB.

WEEK & TOPIC	DATE	DAY	ZOOM Meeting	DUE
Week 6: Micronetworks and Reflexes	2/22/21	Monday		
	2/23/21	Tuesday	No class, Flandreau-designated "break day". Optional team	
	2/24/21	Wednesday		Week 6 reading and required videos
	2/25/21	Thursday	Quiz 5 + Circuits & Reflexes	
	2/27/21	Saturday		Week 6 review
Week 7: Psychopharmacology & Neurotransmitters	3/1/21	Monday		
	3/2/21	Tuesday	Team homework 2	
	3/3/21	Wednesday		Week 7 reading and required videos
	3/4/21	Thursday	Quiz 6 + Psychopharm and NTs	
	3/6/21	Saturday		Week 7 review
Week 8: Retina & Vision in the brain; please note modified schedule this week	3/8/21	Monday		Reading and videos for retina
	3/9/21	Tuesday	**Quiz 7** + Retina	
	3/10/21	Wednesday	GVSU-designated break day	
	3/11/21	Thursday	Retina #2; Team Homework 2	
	3/13/21	Saturday		Reading and videos for vision in the brain
Week 9: Somatosensation & Pain	3/15/21	Monday		
	3/16/21	Tuesday	Vision in the Brain	
	3/17/21	Wednesday		Week 9 reading and required videos
	3/18/21	Thursday	Quiz 8 + Somatosensation & Pain	
	3/20/21	Saturday		Week 9 Review **Team Homework 2** *Mid-Semester Feedback (EC, Optional)*
Week 10: Test 2 (Circuits, Reflexes, Neurotransmitters & Sensory Systems)	3/22/21	Monday		
	3/23/21	Tuesday	Catch up / Review	
	3/24/21	Wednesday		
	3/25/21	**Thursday**	**Progress Test 2**	
	3/27/21	Saturday		*Auditory System Module (EC, Optional)*

Part 3: Course Schedule

Detailed module requirements including reading guides and individual and team assessments are found in the weekly modules on BB.

WEEK & TOPIC	DATE	DAY	ZOOM Meeting	DUE
Week 11: Plasticity, Learning & Memory please note modified schedule this week	3/29/21	Monday		Plasticity reading & Videos
	3/30/21	Tuesday	**Quiz 9 +** Plasticity	
	3/31/21	Wednesday		Recommended reading & videos for learning & memory
	4/1/21	Thursday	No class, GVSU designated "break" day	
	4/3/21	Saturday		Learning & Memory reading & Videos
Week 12: Degenerative Disorders, PD, HD, AD	4/5/21	Monday		
	4/6/21	Tuesday	Learning & Memory	
	4/7/21	Wednesday		Week 12 reading and required videos
	4/8/21	Thursday	Quiz 10 + Degenerative Disorders	
	4/10/21	Saturday		Week 12 Review
Week 13: Psychiatric Disorders Schizophrenia, MDD	4/12/21	Monday		
	4/13/21	Tuesday	Team Homework 3	
	4/14/21	Wednesday		Week 13 reading and required videos
	4/15/21	Thursday	Quiz 11 + Psychiatric Disorders	
	4/17/21	Saturday		Week 13 Review **Team Homework 3**
Week 14: Review	4/19/21	Monday		
	4/20/21	Tuesday	No class, Flandreau-designated break day. Office hours drop in.	
	4/21/21	Wednesday		Review Module
	4/22/21	**Thursday**	**Final Exam Review**	
	4/24/21	Saturday		CATME Evaluation Survey; *Optional EC Post-Test* LIFT
Week 15: Final Exam	4/26/21	Monday		
	4/27/21	Tuesday	Optional- take exam today instead or do one part tues and one part thurs	
	4/28/21	Wednesday		
	4/29/21	Thursday	Final Exam 8am - 9:50am	Please arrange for uninterupted time and internet during this exam