

# **BIO/PSY 351**

## **SYSTEMS NEUROSCIENCE**

**BSC 108 East**

**Every Tuesday & Every Thursday**

**11:30 AM -12:45 PM**

**Dr. Barbara Blatchley**

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**Office Hours:** Monday and Wednesday afternoons (1:30 pm to 3:00 pm) or by appointment.

**Dr. Jennifer Larimore**

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**Office hours:** Tuesday/Thursday 1:00 - 1:50 PM, by appointment, 201 West

\*\*Read each part of this syllabus to understand the expectations for this class. Do not come to the first day of classes if you did not read the entire syllabus.

\*\*If you email your professor with a question that is covered in this syllabus, you will be asked to find the answer in the syllabus.

\*\*Professors take time and care to include information they find important in the syllabus. Understanding what your professor thinks is important is one of the keys to success in any class.

### **SYLLABUS OUTLINE:**

1. Course Overview
2. Course and Skill Objectives (what you gain from the course)
3. Grade Breakdown
4. Course Overview
  - a. Reading and Lectures
  - b. Quizzes
  - c. Article Analysis
  - d. Exams
  - e. Grant Pre-proposal -The Final Project
  - f. Article Presentation
5. Academic Honesty
6. Class Management

## **1. COURSE OVERVIEW:**

This course examines foundational principles in cellular neuroscience. This includes the electrophysiological nature of neuronal cells, their structure and function, and the various extracellular and intracellular messages used to communicate in the nervous system.

### **Course REQUIRED Text**

Medical Neurobiology. Peggy Mason 2<sup>nd</sup> Edition. Oxford University Press

### **Course Materials**

- Posted to Canvas: PowerPoints PDF files
- Must have access to a computer or tablet. If you need help with this, visit ITS.
- Cell phones should NEVER be visible/used during class time and can result in a loss of points on the daily assignment.
- Email/Canvas: Instructors will make announcements regularly via email. It is your responsibility to check your Agnes Scott email AND Canvas page daily. When responding to a professor via email, take care that your email is professional AND that you identify what class you are in.
- Please come see your instructor early in the semester if you are struggling.

### **Course Expectations:**

Based on assignments for both lecture and lab, **you should spend 8-10 hours studying for this class (approximately 1 hour a day)** outside of class time.

This class will require about

- 3 hours for article reading each week
- 2 hours for textbook reading each week
- 2 hours for notes on the article and reading
- 1 hour for project work/presentation work each week.

If you are in 4 classes, and each class requires 10 hours outside of class, that is 40 hours a week, or the equivalent of a full-time job. This course will **require your active, regular participation in lecture times.**

### **ANSWER THE FOLLOWING: Purpose and Plan:**

What purpose does this class serve for you?

What are your personal goals for this class?

What will it take to achieve these goals?

*The work will get hard and you will need to remind yourself what you are aiming for at the end of the semester.*

## **2. COURSE OBJECTIVES AND SKILL OBJECTIVES**

Upon successful completion of this course, the student will achieve the following objectives:

- Demonstrate knowledge of the structure and function of the different types of cells in the nervous system
- Demonstrate understanding of the electrophysiological nature of neurons.
- Design an experiment, analyze the results, draw conclusions, and report on the research both with scientific writing and an oral presentation.
- Critically read and evaluate primary scientific literature.
- Utilize effective teamwork to problem solve in an inquiry-based research laboratory project.

### Scientific/Career Skills Gained::

Skills you will gain from this course that advance your development as a scientist (and you SHOULD add CV and personal statements).

As such, you should ALWAYS provide evidence (do not simply state you have these skills) that you have mastered these skills from this class and other classes.

Critical thinking/Problem Solving – through weekly article analysis, students will be able to critically read and evaluate scientific literature. If you are reading this before the start of the first day of class, send an email to both professors with a picture of your favorite plant and explaining why it is your favorite plant for 1 extra credit point - you cannot tell classmates about this. Through designing experiments and inquiry-driven laboratory experiences, students will sharpen their ability to think critically about neuroscience.

These are assignments you can discuss in your personal statement as examples of your ability to solve problems.

Oral Communication – through article presentations, students will demonstrate their abilities to present scientific findings to a broad audience – again, assignments that serves as evidence that you can communicate science effectively

Written Communication – through weekly assignments and the final project, students will demonstrate their ability to write scientifically - audience – again, assignments that serves as evidence that you can communicate science effectively.

Teamwork/Collaboration – working with a lab team as well as a team for presentations will enable the students to practice real-world teamwork and leadership competencies that are taught as a part of SUMMIT. Whatever your career is in the future, you will be part of a team.

Research Skills – as a result of this course, students can design an experiment, analyze the results, draw conclusions, and report on the research both with scientific writing and an oral presentation.

The laboratory portion of this course is designed to enhance the learning in the lecture as well as progress the career of each student as a scientist.

This experience is huge and sets you apart from a lot of other students. You need to capture this experience as its own paragraph in your personal statement.

### 3. GRADING AND DEADLINES

#### Deadlines:

It is your responsibility to keep up with the class material.

Thus, if you miss class, it is up to you to find out from a reliable source if you missed an assignment.

If a missed class cannot be avoided because of illness or emergency, it is **STRONGLY** recommended that you contact the instructor **IN ADVANCE**, or within 24 hours of the class period.

The professors WILL NOT accept late work without APPROVAL PRIOR to the deadline.

If you miss a quiz because of tardiness, you cannot make it up.

If you have any extenuating circumstances - health or family crisis - that would require an extension on more than 1 assignment, you will need to reach out to the Office of Accessible Education. They can confidentially receive any of your information and email ALL of your professors simply stating that due to a current crisis, you will need extended time on an assignment.

#### **Grading:**

The final grade for this course will be based on the following:

| <b>LECTURE GRADE:</b>      |                                       |
|----------------------------|---------------------------------------|
| Exams                      | 100 points (50 points each x 2 tests) |
| Outline for Final Project  | 20 points                             |
| Class Final Project Draft  | 30 points                             |
| Class Final Project        | 100 points                            |
| Article Presentations      | 80 points (40 points x 2)             |
| Quiz on Tues Lecture Topic | 55 points (5 points x 11)             |
| Quiz on Assigned Reading   | 45 points (5 points x 9)              |
| Article Analysis Form      | 50 points (5 points x 10)             |

\*Additional points or assignments may be added by the instructors

*The following grading scale will apply for converting numerical grades into final letter grades:*

*93 to 100: A, 90 to 92.9: A-*

*87 to 89.9: B+, 83 to 86.9: B, 80 to 82.9: B-, 77 to 79.9:*

*C+, 73 to 76.9: C, 70 to 72.9: C-, 67 to 69.9:*

*D+, 63 to 66.9: D, 60 to 62.9: D-,*

*Lower than 60: F*

## **4. COURSE OVERVIEW:**

### **a. Readings and Lectures:**

There will be chapter reading and an article assigned for each topic. READ the assigned material BEFORE class. TAKE NOTES and be on time.

Tardiness is not professional.

Doing work other than taking notes during lectures is not professional.

If you are often tardy or often doing work other than paying attention to lecture, do not ask for a letter of recommendation.

### **b. Quizzes:**

Reading Quizzes: The day of a lecture (usually Tuesday), there will be a 5 point quiz on the chapter reading material. These quizzes are not able to be rescheduled. And if you are late to class, you will not be given extra time.

Lecture Quizzes: The day after a lecture (usually Thursdays), there will be a 5 point quiz on the lecture material. These quizzes are not able to be rescheduled. And if you are late to class, you will not be given extra time.

### **c. Article Analysis to be completed during Article Presentation**

The day of the article presentation, the professor will hand out several article specific questions to be answered during the presentation. The Article Analysis is due at the end of the class period.

### **d. Exams (see schedule for tentative dates):**

There will be 2 exams during the semester. The exams will be oral exams. The professors will discuss the expectations in class. However, here are some important things that you should know:

During the exam, students will be asked to provide oral answers for 1- 2 questions related to topics covered in the course.

Each student will have 10 minutes to provide their answers. Here is the rubric

1. Demonstrated knowledge of the subject matter - 20 points
2. Answered additional questions well - 10 points
3. Confidence (eye contact, posture, etc.) - 5 points
4. Answered the question thoroughly and did not add unnecessary information. – 5 points
5. Time management - 5 points
6. Overall all performance - 5 points

**e. Grant Pre-proposal, The Final Project:**

This project is only 2 pages (no title page). Within those 2 pages, you must have your grant pre-proposal, citations and any figures. It is single-spaced, Arial Font, Size 11 with 1-inch margins.

Use the citation style for Journal of Neuroscience. Your grant pre-proposal Final Draft must be proof-read by the CWS to receive full points for the pre-proposal.

This must be turned in as a word document with at least 10 references.

There are 2 examples on Canvas from previous projects.

*Final Project is due at 5PM on Wednesday May 1, 2024 - no extensions allowed.*

As per the student handbook, faculty members are not allowed to receive any work that is not a final exam past 5PM on the last day of classes. This is to protect the student's time to study for finals. We cannot extend the final project deadline.

The Grant Pre-proposal should include:

1. The Background – 3-4 paragraphs of background with citations.

The challenge here is choosing your background data. There is bound to be a lot of background.

The background information should explain why you are making the hypothesis you are making. Somewhere in this section, you should also explain why this project is significant to the field of study and innovative.

2. Hypothesis. The end of the last background paragraph should be your hypothesis. Clear, testable and supported by the background.

3. Specific aims. Transition from the hypothesis to the specific aims “This hypothesis leads me to make the following predictions. 3 specific aims - 3 testable predictions based on your hypothesis. The specific aim is one sentence.

Then describe what techniques (yes, plural) you will use to assess your prediction (shown for specific aim #1). It is generally best to use more than one technique because that will further support any claim you make. Discuss the # of test subjects, sex of subjects, and age of subjects used and the number of trials needed to obtain clean stats.

4. References. For a grant pre-proposal, after the 2 - 3 aims comes the references. You need at least 8 references for this LOI.

5. Figure of previous data leading to the hypothesis. After the references comes a figure 1. This is your preliminary data that lead you to the hypothesis. Generally, you can talk about it in the background as you near introducing your hypothesis. Use a figure from a primary literature article.

### **Grant Outline Grading Rubric (20 points)**

|          |   |
|----------|---|
| 5 points | I. Background. Supports the predictions and hypothesis, is clear, and is correct.         |
| 2 points | A. Overall Impact of the research on the field of study and significance of the research. |
| 1 point  | B. Innovation of the project and approach.  |
| 2 points | C. Hypothesis. Solid, testable hypothesis, clearly stated and supported by background.    |
| 2 points | II. Specific Aim 1. Clear experimental summary and predictions.                           |
| 2 points | III. Specific Aim 2. Clear experimental summary and predictions.                          |
| 2 points | IV. Specific Aim 3. Clear experimental summary and predictions.                           |
| 2 points | Figures. Supports the hypothesis and predictions, is labeled and has a legend             |
| 2 points | References (have at least 5 solid references)   |

### **Grant DRAFT Grading Rubric (40 points)**

|           |  |
|-----------|--|
| 10 points | Background. Supports the predictions and hypothesis, is clear, and is correct.         |
| 4 points  | Overall Impact of the research on the field of study and significance of the research. |
| 2 point   | Innovation of the project and approach.  |
| 4 points  | Hypothesis. Solid, testable hypothesis, clearly stated and supported by background.    |
| 12 points | Specific Aims (3 of them, 4 points each). Clear experimental summary and predictions.  |
| 4 points  | Figures. Supports the hypothesis and predictions, is labeled and has a legend          |
| 4 points  | References (have at least 5 solid references)  |

### **Grant Pre-Proposal Grading Rubric**

|           |   |
|-----------|---|
| 30 points | Background. Supports the predictions and hypothesis, is clear, and is correct.          |
| 10 points | Overall Impact of the research on the field of study and significance of the research.  |
| 4 points  | Innovation of the project and approach.   |
| 11 points | CWS proof-read (final draft + rubric at your appointment).                              |
| 5 points  | Hypothesis. Solid, testable hypothesis, clearly stated and supported                    |
| 30 points | Specific Aims (3 of them, 10 points each). Clear, experimental summary and predictions. |
| 5 points  | Figures. Supports the hypothesis and predictions, is labeled and has a legend           |
| 5 points  | Instructions followed/format requirements followed                                      |

### **f. Group Article Presentations:**

The group preparing the article presentation will need to create a PPT, keynote, or Google Slides (no Prezi). The students who are not presenting are responsible for paying attention to the presentation. *It is expected that you pay attention, engage and learn from the group presenting.*

### **Read the instructions below very carefully BEFORE your group begins putting together your presentation.**

The groups are assigned on Canvas. If you go to our page, and click on the “people” menu, you can access the groups.

The presentation ***must be*** 25 – 35 minutes. Points will be taken off if it is too short or too long.

EACH member of the group must present at least 1 figure, and roughly present an equal amount of time as the other group members. If there are less results than there are group members, then use a

figure from one of the sources cited in the introduction or conclusion to explain why the data is important or necessary.

Each Member MUST submit a PDF of THEIR slides (NOT THE WHOLE PRESENTATION) for grading 48 hours prior to the presentation.

**If you put it on a slide, BE ABLE TO EXPLAIN IT!!**

**Introduction section** – Provide background information to help our class understand your topic.

*Why is this experiment important?*

*How does this research impact society?*

*What background information will help us understand what was done (reference the papers cited in the introduction)?*

Be sure to clearly state the hypothesis and/or experimental question of the article.

\*\*Sometimes a picture or an infographic is more useful than bullet points.

\*\* Do not have a text heavy slide. Do not have blank space on the slide. \*\*Anything on the slide is fair game for questions.

**Results** – Each piece of the results (data) presented must cover the 3 points below or points will be taken off. Any time you present a piece of data, always explain

(1) what the audience is looking at (walk us through the pieces)

(2) what method you used (if the method is new to the class, explain it in a clear way, potentially using videos or graphics), and

(3) what the data mean (your interpretation) and why they are important.

Be sure to include a figure legend and a descriptive figure title for each.

\*\* Do not label figure/results slides with the title as “Figure 1”. Gives us a more descriptive title like “Does sleep quality impact learning and memory?”.

**Conclusions** – Include simple statements to describe the key takeaway points from the experiments and their importance in the field of study. This is a summary of the results section, but it is necessary to remind everyone.

*How did the study contribute to the hypothesis?*

*How does this data impact society?*

Remind the audience why this research was important to the field of study.

**Feedback from the professors after the presentation in front of the class**

The professors will **heavily** critique each presentation. This is done with all the respect of an individual presenting and for the benefit of the individual.

While the professor’s critique in this manner may come across as harsh, this is not the intention and should not be taken personally, as our critique does not reflect our opinion of you.

This may be the first time many are presenting scientific data, and we are fully aware and respect that. Our critical analysis is meant to aid an individual in becoming the best scientist they can.



| 40 points total                               | <b>5 points<br/>EXCELLENT</b>  | <b>4 points<br/>GOOD</b>   | <b>3 points<br/>MOSTLY<br/>GOOD</b>  | <b>2 points<br/>FAIR</b>  | <b>1 point<br/>NEEDS WORK</b>   | <b>0 points<br/>POOR</b>                 |
|---|--|--|--|---|---|--|
| <b>The material/the content is organized.</b> | <ul style="list-style-type: none"> <li>• Clear title</li> <li>• Clearly defined sections</li> <li>• Clear flow of topics</li> <li>• Easy to follow</li> <li>• eye-catching</li> <li>• Diagrams clearly labeled</li> <li>• Good balance of text and graphs or pictures</li> </ul>   | <ul style="list-style-type: none"> <li>• Clear title</li> <li>• Sections defined</li> <li>• Generally easy to follow, though may require rereading for clarity</li> <li>• Neat</li> <li>• Diagrams present</li> <li>• Fair balance of text and graphs or pictures</li> </ul> | <ul style="list-style-type: none"> <li>• Title present</li> <li>• Sections unclear or inappropriate</li> <li>• Takes effort to follow thoughts and ideas</li> <li>• Bland</li> <li>• Diagrams absent or unclear</li> <li>• Mainly or all text</li> </ul> | <ul style="list-style-type: none"> <li>• Sections unclear or inappropriate</li> <li>• Takes too much effort to follow thoughts and ideas</li> <li>• Boring</li> <li>• Diagrams absent or wrong</li> <li>• Mainly or all text</li> </ul> | <ul style="list-style-type: none"> <li>• Title unclear or absent</li> <li>• Sections unclear or absent</li> <li>• No flow of ideas</li> <li>• Cluttered, messy</li> <li>• Bland</li> <li>• Boring</li> <li>• No variety in layout</li> <li>• Diagrams absent</li> <li>• Majority is text</li> </ul> | No Marks                                 |
| <b>Science Content</b>                        | <ul style="list-style-type: none"> <li>• contains all the necessary information to understand the project</li> <li>• Information is explained in a understandable fashion</li> <li>• No excess information that is distracting</li> <li>• All abbreviations are defined</li> </ul> | <ul style="list-style-type: none"> <li>• contains most of the information necessary to understand the project</li> <li>• Information is explained in a pretty understandable fashion</li> <li>• Most abbreviations are defined</li> </ul>                                    | <ul style="list-style-type: none"> <li>• contains some of the information necessary to understand the project</li> <li>• Information is poorly explained</li> <li>• Some abbreviations are defined</li> </ul>  | <ul style="list-style-type: none"> <li>• Information is poorly explained</li> <li>• Excess information is distracting</li> <li>• Some abbreviations are defined</li> </ul>  | <ul style="list-style-type: none"> <li>• contains little to no information necessary to understand the project</li> <li>• Information is not explained</li> <li>• Excess information is distracting</li> <li>• abbreviations are not defined</li> </ul>   | No Marks                                 |
| <b>Oral Presentation</b>                      | Well-rehearsed without long pauses • clear articulation • appropriate eye contact, voice volume  | Well-rehearsed with some pauses • Articulation, eye contact, voice volume generally adequate   | •Decent-rehearsal<br>• Lacking in one of areas: articulation, eye contact, voice volume  | • Obvious lack of rehearsal • Lacking in one of areas: articulation, eye contact, voice volume  | • Obvious lack of rehearsal • lacking in following areas: articulation, eye contact, voice volume   | No Marks                                 |
| <b>Ability to Answer Questions</b>            | Answers questions asked by audience in a clear manner that demonstrates knowledge of the topic   | Answers questions asked by audience in a clear manner that demonstrates some knowledge of the topic  | Answers questions asked by audience in a manner that demonstrates a bit of knowledge of the topic  | Answers questions asked by audience in a manner that demonstrates little knowledge of the topic   | Answers questions asked by audience in a clear manner that demonstrates no knowledge of the topic   | No Marks                                 |
| <b>Professionalism</b>                        | Student dressed and spoke professionally   | Student was mostly dressed professionally, and spoke mostly professionally   | Student was mildly dressed professionally, and spoke mildly professionally   | Student was not dressed professionally or did not speak professionally  | Student was not dressed professionally and did not speak professionally   | No marks                                 |
| <b>Slides Turned in 48 Hours In Advance</b>   | Slides were turned in 48 Hours in Advance  |  |  |   |   | Slides not turned in 48 hours in advance |
| <b>Peer Evaluations</b>                       | Your Group reflected that you contributed well to the project  | Your group reflected that you did not contribute to the project as much as you could have  | Your group reflected that your contribution was lacking  | Your group reflected you contributed poorly to group work or group practice   | Your group reflected that you did not contribute to group work/group practice   | No marks                                 |
| <b>Individual Student Presentation Time</b>   | Student presented equal amount of time compared to the group   | Student mostly presented an equal amount of time compared to the group   | Student presented a little less compared to the group  | Student presented less time compared to group   | Student presented far less time compared to the group   |  |

## 5. ACADEMIC HONESTY FOR YOUR WORK AS A SCIENTIST:

You are responsible. Review the course syllabus for the professor's expectations regarding course work and class attendance. By placing your name on ANY assignment, you are stating that you completed that assignment with academic honesty.

Do not cut and paste from the slide, your book, your neighbor, Wikipedia, ChatGPT or the internet.

To further your science education, you need to be able to re-word science in your own voice. If your answers are not your own, you will receive a 0 for the assignment. All cases of academic dishonesty will be turned into Honor Court..

### Artificial Intelligence Models

Artificial intelligence (AI) language models, such as ChatGPT, may be used for any assignment with appropriate citation. Examples of citing AI language models are below. You are responsible for fact checking statements composed by AI language models.

#### AI EXAMPLE:

When prompted with "Is the left brain right brain divide real or a metaphor?" the ChatGPT-generated text indicated that although the two brain hemispheres are somewhat specialized, "the notation that people can be characterized as 'left-brained' or 'right-brained' is considered to be an oversimplification and a popular myth" (OpenAI, 2023).

#### Reference

OpenAI. (2023). ChatGPT (Mar 14 version) [Large language model]. <https://chat.openai.com/chat>

Parenthetical citation: (OpenAI, 2023)

Narrative citation: OpenAI (2023)

***Academic dishonesty is reported to medical schools and graduate schools as per their request. Any academic dishonesty relinquishes the privilege of asking for a letter of recommendation from the professor and will receive a 0 on the assignment.***

**Plagiarism:** Plagiarism can include portraying another's work or ideas as your own, buying a paper online and turning it in as if it were your own work, or not citing or improperly citing references on a reference page or within the text of a paper. Putting a citation behind a statement gives ownership to that source, but, if you do not reword that information, it is plagiarism.

**Intellectual Fraud:** do not falsify or create data and resources.

**Cheating:** do not allow another party to do your work/exam, or submit the same or similar work in more than one course without permission from the course instructors. Cheating also includes taking an exam for another person, looking on another person's exam for answers, using exams from previous classes without permission, or bringing and using unauthorized notes or resources (i.e., electronic, written, or otherwise) during an exam.

## **6. CLASS MANAGEMENT:**

**Course evaluations:** At the end of the semester you will receive an email asking you to submit an evaluation of the course. Please give feedback! Your input is important to the college as a whole and to us as instructors. We take your comments very seriously.

**Course Accessibility and Academic Accommodations.** Agnes Scott College views disabilities as an integral part of the rich diversity of our community and strives to make all learning experiences as accessible as possible. If you are a student who receives academic accommodations through the Office of Accessible Education, please schedule a meeting with your instructor within the first two weeks of classes to discuss how your accommodations will be implemented for this course. During this meeting, you are not expected to disclose any details concerning your disability, though you may discuss these details at your discretion.

**Title IX:** Agnes Scott is here to help you if you have experienced any form of sexual harassment or violence, dating or domestic violence, or stalking. Please talk to any faculty or staff member with whom you feel comfortable. Faculty and staff members want to support you and have been trained to help. They will also inform the Title IX office so that you learn about options available to you. If you do not want college administrators to know what you have experienced, you may talk to the chaplain, as well as nurses or counselors in the Wellness Center with complete confidentiality. They will not tell anyone what you share with them unless you give your express permission. You may contact the Title IX Coordinator directly at [T9Coordinator@agnesscott.edu](mailto:T9Coordinator@agnesscott.edu).

**Inclusion:** Agnes Scott is a diverse and inclusive community. “As one of the most diverse colleges in the nation, ASC is ideally positioned to be the model of a diverse and inclusive community that society can aspire to be. Such diversity raises the intellectual quality of the classroom experience, creating a unique environment for learning to understand and navigate the challenges of our times. By studying, living, and playing together, Agnes Scott College’s remarkably diverse student body hones the habits of mind, skills, and knowledge essential to ethical and innovative leadership in our increasingly heterogeneous and global society. As such, this course adheres to the principles of diversity and inclusion as integral to the Agnes Scott community and respects people from all backgrounds. As a first step, this course affirms people’s decisions about gender expression and identity and will use each other’s preferred names and gender pronouns at all times.

**Content warning:** This course will explore cell biology, genetics, ecology and evolution, which might raise issues of racism, sexism, classism, heterosexism, cissexism, ableism, and other kinds of privilege. I invite you to come see me if you want more information. If you feel you will be unable to fully participate in the course requirements, set up a meeting with the course instructor to determine appropriate accommodations.

## 7. SCHEDULE

|       | Date | BEFORE CLASS  | Class Topic   |
|-------|------|---|---|
| TUES  | 1/9  | BEFORE class Read Your Syllabus   |   |
| THURS | 1/11 | BEFORE class Read your 1st paper for your presentation  | Work on your first presentation as a group.   |
| TUES  | 1/16 | Chapter 2 and 3   | Quiz on Assigned Reading<br>Neurobiology 101 Lecture                                      |
| THURS | 1/18 | <a href="https://pubmed.ncbi.nlm.nih.gov/35381189/">https://pubmed.ncbi.nlm.nih.gov/35381189/</a>   | Quiz on Tues Lecture Topic<br>Group #1 Presentation #1<br>Article Analysis Form           |
| TUES  | 1/23 | Chapter 10 and 11   | Quiz on Assigned Reading<br>Neurobiology 102 Lecture                                      |
| THURS | 1/25 | <a href="https://pubmed.ncbi.nlm.nih.gov/33369003/">https://pubmed.ncbi.nlm.nih.gov/33369003/</a>   | Quiz on Tues Lecture Topic<br>Group #2 Presentation #1<br>Article Analysis Form           |
| TUES  | 1/30 | Chapter 5 and 7   | Quiz on Assigned Reading<br>Neuroanatomy Lecture/Sheep Brain dissection                   |
| THURS | 2/1  | <a href="https://pubmed.ncbi.nlm.nih.gov/11588189/">https://pubmed.ncbi.nlm.nih.gov/11588189/</a>   | Quiz on Tues Lecture Topic<br>Group #3 Presentation #1<br>Article Analysis Form           |
| TUES  | 2/6  | Presentation Group Second Article   | Presentation Group's Second Article<br>Presentation Work<br>Final Project work            |
| THURS | 2/8  | <a href="https://pubmed.ncbi.nlm.nih.gov/35287702/">https://pubmed.ncbi.nlm.nih.gov/35287702/</a>   | Group #4 Presentation #1<br>Article Analysis Form<br>Final Project Outline Due by 5PM     |
| TUES  | 2/13 | Chapter 14 - Perception   | Quiz on Assigned Reading<br>Perception Lecture  |
| THURS | 2/15 | <a href="https://academic.oup.com/brain/article/126/5/1173/489297">https://academic.oup.com/brain/article/126/5/1173/489297</a>   | Quiz on Tues Lecture Topic<br>Group #5 Presentation #1<br>Article Analysis Form           |
| TUES  | 2/20 | Chapter 15 - Vision   | Quiz on Assigned Reading<br>Vision Lecture  |
| THURS | 2/22 | <a href="https://iovs.arvojournals.org/article.aspx?articleid=2164340#:~:text=Retinal%20abnormalities%20in%20early%20AD,quantifiable%20abnormalities%20in%20the%20retina.">https://iovs.arvojournals.org/article.aspx?articleid=2164340#:~:text=Retinal%20abnormalities%20in%20early%20AD,quantifiable%20abnormalities%20in%20the%20retina.</a> | Quiz on Tues Lecture Topic<br>Group #1 Presentation #2<br>Article Analysis Form           |
| TUES  | 2/27 | <i>Work on Final Project outside of class</i>   |   |
| THURS | 2/29 | <b>Test #1 on Neurobiology, Neuroanatomy, Perception and vision</b>   | <b>See Announcements for your assigned time and assigned professor and potential test</b> |

|       |          |   | <b>questions</b>   |
|-------|----------|---|--|
|       | 3/3 - 16 | <i>Journey's/Peak Week/Spring Break</i>   |  |
| TUES  | 3/19     | Chapter 13  | Quiz on Assigned Reading<br>Learning and Memory  |
| THURS | 3/21     | <a href="https://pubmed.ncbi.nlm.nih.gov/30742114/">https://pubmed.ncbi.nlm.nih.gov/30742114/</a>   | Quiz on Tues Lecture Topic<br>Group #2 Presentation #2<br>Article Analysis Form  |
| TUES  | 3/26     | Chapter 20  | Quiz on Assigned Reading<br>Voluntary Movement   |
| THURS | 3/28     | <a href="https://pubmed.ncbi.nlm.nih.gov/36185472/">https://pubmed.ncbi.nlm.nih.gov/36185472/</a>   | Quiz on Tues Lecture Topic<br>Group #3 Presentation #2<br>Article Analysis Form  |
| TUES  | 4/2      | <i>Work on Final Project outside of class</i>   |  |
| THURS | 4/4      | <i>Work on Final Project outside of class</i>   |  |
| TUES  | 4/9      | Chapter 27: Homeostatic Systems, pages 459 – 462 and Liu, D., and Dan, Y. (2019) A motor theory of sleep-wake control: Arousal-action circuit. Annual Review of Neuroscience, 42, 27-46   | Quiz on Assigned Reading<br>Sleep<br>Link to Liu & Dan article:<br><a href="https://escholarship.org/uc/item/4106h64h">https://escholarship.org/uc/item/4106h64h</a> |
| THURS | 4/11     | <a href="https://www.pnas.org/doi/abs/10.1073/pnas.1721694115?url_ver=Z39.88-2003&amp;rfr_id=ori%3Arid%3Aacrossref.org&amp;rfr_dat=cr_pub++openurl@pubmed">https://www.pnas.org/doi/abs/10.1073/pnas.1721694115?url_ver=Z39.88-2003&amp;rfr_id=ori%3Arid%3Aacrossref.org&amp;rfr_dat=cr_pub++openurl@pubmed</a> | Quiz on Tues Lecture Topic<br>Group #4 Presentation #2<br>Article Analysis Form<br>Final Project Draft due at 5PM  |
| TUES  | 4/16     | Chapter 7 : Forebrain, pages 130 – 134, and The Emotional Brain, Fear, and the Amygdala Joseph LeDoux Cellular and Molecular Neurobiology, Vol. 23, Nos. 4/5, October 2003 (© 2003)   | Quiz on Assigned Reading<br>Emotion<br>Link to LeDoux article:<br><a href="https://pubmed.ncbi.nlm.nih.gov/14514027/">https://pubmed.ncbi.nlm.nih.gov/14514027/</a>  |
| THURS | 4/18     | <a href="https://pubmed.ncbi.nlm.nih.gov/18568035/">https://pubmed.ncbi.nlm.nih.gov/18568035/</a>   | Group #5 Presentation #2<br>Article Analysis Form  |
| TUES  | 4/23     | <i>SpARC</i>  | <i>Present your Lab Poster</i>   |
| THURS | 4/25     | <b><i>Test #2 on Learning, Memory, Motor Systems, Sleep and Emotions</i></b>  | <b><i>See Announcements for your assigned time and assigned professor and potential test questions</i></b>   |
| FRI   | 4/26     | <i>Scotties with Nerves: 4:30 - 6:00 PM</i>   | <i>Present your Lab Poster</i>   |
| TUES  | 4/30     | Read the personal statement handouts on Canvas<br>Read the CV/resume handouts on Canvas<br>Analyze the CV template on Canvas<br>Print 2 copies of your resume/CV and 2 copies of your personal statement  |  |
| WED   | 5/1      | Last DAY of UG Classes  | Final Project due at 5PM   |

**\*\*As per the student handbook, faculty members are not allowed to receive any work that is not a final exam past 5PM on the last day of classes. This is to protect the student's time to study for finals. We cannot extend the final project deadline.**