

**PSYC 2324**  
**Introductory Neuroscience**  
Time: 1:30-2:50pm, MW  
Room: PSYCHOLOGY 115

<b>Professor:</b>	Katherine M. Serafine, Ph.D.	TA:	CJ Woloshchuk
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Office Hours:	Tuesdays (email for appt)	Office Hours:	email for appointment

**Required Text:**

Purves, Augustine, Fitzpatrick, Hall, LaMantia, Mooney, Platt & White (2018). **Neuroscience 6<sup>th</sup> edition**, Oxford University Press. ISBN: 9781605353807. \*Note that the hard copy, loose leaf, or ebook version are all fine as long as it is 6<sup>th</sup> edition. Supplemental required reading is also provided on blackboard.

**Course Description:**

This course begins with the study of neuronal structure and function, and the propagation of nerve impulses and the transfer of information between cells. We then move to the sensory systems such as olfaction, hearing, and vision and discuss how physical energy such as light is converted into neural signals, where these signals travel in the brain, and how they are processed. Next we study the control of voluntary movement. Finally, we cover higher brain functions and homeostasis, including the neurochemical bases of brain diseases and the systems which control motivation, emotion, learning and memory. The knowledge gained in this course will provide an appropriate background for students planning to pursue careers in neuroscience research, medicine or the allied health fields, or education.

**Prerequisites: Undergraduate student in good standing. Psychology 1301 or Biology 1305 and 1107 with a C or better.**

**Learning Objectives:**

This course will provide a broad introduction to nervous system structures and functions. At the end of the academic term, students who successfully complete this course will be able to: 1) define the organization of the central and peripheral nervous system; 2) explain the properties of nervous system cells including the propagation of electrical signals and cell-cell communication; 3) describe the various neurotransmitter systems and how they operate within systems or circuits; and 4) demonstrate an understanding of the diagnostic and research methods used in neuroscience research and medicine.

**Blackboard:**

Everything you need for this class can be found on Blackboard. Please check Blackboard for announcements at least once per week. Blackboard is also where you will find online quizzes and other supplemental materials relevant to the course. Make sure you check your email regularly for updates from me via blackboard.

**Attendance:**

To do well in this course, you are encouraged to attend every class session, listen actively, take notes and ask questions. However, lecture slides will be made available on blackboard. I do not have a formal attendance policy; however, often there will be in class extra credit opportunities for those who are in attendance (see below). Note that in class pop quizzes cannot be made up, so it is recommended that you come to class in person as often as possible to maximize opportunities to get extra credit.

### Grades:

#### Exams: 400pts

- There will be 4 exams, each worth 100 points during the course of the semester (dates below).
- Combinations of multiple choice, short answer and/or essay, matching, true/false, labeling or fill in the blank questions will be included.
- **No test scores will be dropped. No make-up exams will be administered under any circumstances, no matter how compelling.**
- The majority of the exam will be focused on lecture material, but 10-20% will be from the book (and most of the book questions will be very similar to the blackboard quizzes). Note that the final is partially cumulative.
- **Exams will only occur during class, and no additional time will be provided.** If you show up late on exam day, you only have until the end of class to complete the exam. If you need more time, please contact CASS for academic support accommodations prior to the first exam.
- If you show up late on exam day, and someone has already turned in the exam, you will not be permitted to take the exam.

#### Assignments: 100pts

- **Group Days & Homework Worksheets (25pts each)**
  - There will be 4 group days (outlined below) during the semester in which you will work with groups to learn about a specific topic in neuroscience.
  - For each group day, you must come to class with homework assignments completed (due at the start of class).
  - During these sessions you will work as a group to complete the same homework worksheets. You will be evaluated on the following:
    1. Turning in your own homework on time at the start of the class (5pts).
      - Note that late attendance will be automatically deducted 1 point per minute late, and if you are more than 5 minutes late to class you will lose all 5 of these points.
      - If you are unable to attend class, you can submit your homework via email to [kmserafine2@utep.edu](mailto:kmserafine2@utep.edu), but the email must be time stamped before class (or late work will be deducted as if you handed it in late in person as described above – 1 point off per minute late, and minus all 5 points if it is later than 5 minutes after the start of class).
    2. Attendance on group day (5pts). For example, you can turn in your homework (item #1) and leave or send in your homework with someone else. If you do not attend you will still get credit for item #1 but not item #2.
    3. Participation in group discussions as evaluated by your peers (5pts)
      - For each group day you will submit a report to me about your team. I will explain this in more detail as the first group day comes up, but your evaluation will be anonymous, so I encourage you to be honest as you score your peers on their participation. I will take into account all scores from each individual before assigning a grade for item #3.
      - Note that if you turn in item #1, but do not attend class (item #2) your group can still evaluate your performance. Maybe you emailed them the night before or were available via online chat/ text message with them during the group day, but not physically present. There are ways to participate even in the absence of attendance. Your group will be the

judge on whether or not your participation (in person or not) is sufficient. If you do not attend, you should still complete the evaluation for your group, as you will earn points for completing the evaluation or not.

4. Your collective group homework assignment (10pts) (note that if you do not participate or work with the group remotely or in person, you will earn a zero for this).
- Taken together, this means you can earn up to 25pts for each group day/homework assignment.

**Extra Credit:**

- **Quizzes (5pts)**
  - A total of 10-13 quizzes will be available on blackboard throughout the semester. These will consist of multiple choice and true false questions. *Quiz questions will come from the reading assignments NOT from the lecture.* They will only be available during the week corresponding to that reading assignment (so if you are supposed to read chapter 2 by the end of the first week, the chapter 2 quiz will expire on Friday of the first week of classes, etc). The quizzes will expire at 11:59pm each week on Friday.
  - I will also provide a syllabus quiz, which will expire on census day. If you take the syllabus quiz it will replace your lowest quiz grade at the end of the semester.
  - Quiz bonus points will be calculated as follows: (points earned divided by points possible) multiplied by 5. The quiz total for each individual will be added to your total grade once the other 500 points have been completed (e.g., if you get all 500 and still earn 5 quiz points, your final grade will be 505/500).
- **In Class Pop Quizzes (??)**
  - Occasionally I will have unannounced pop quizzes in class, and you will have the opportunity to earn extra credit based on performance on these quizzes. These cannot be made up if you are absent, regardless of the circumstance. Typically, there will be 2.5-5pts extra credit offered in the form of pop quizzes before each exam. These points will be added to the exam immediately following the in-class quiz (e.g., if a pop quiz occurs after Exam 1, the points will be applied to the Exam 2 grade).
- **Exam Extra Credit (??)**
  - There are typically 1-2 extra credit questions on each exam. These are extra, and if you get them wrong you will not be penalized but answering them correctly will get you full or partial extra credit points. They are typically more difficult than the rest of the exam questions and will usually be worth 2.5-5pts extra added to each exam grade.

**Accommodations and Support Services:**

If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, by email to [cass@utep.edu](mailto:cass@utep.edu), or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass). Individuals requiring more time for the exam through CASS must schedule their exam time with CASS to be completed no later than 5pm the same day the class takes the exam. **You must notify me if you require accommodations via CASS no later than one week before the first exam.**

**Academic Dishonesty:**

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student or possessing unauthorized materials during a test. Homework assignments turned in before group day will also be checked for cheating and plagiarism. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another person's as one's own. And, collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Violations will be taken seriously and will be referred to the Dean of Students Office for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions.

**Important Contact Information**

University Counseling Center	202 Union West 747-5302
Center for Accommodations and Support Services	106 Union East 747-5148
University Career Center	103 Union West 747-5640
Department of Psychology	112 Psychology 747-5551

**Final Grade Calculation:** Final grades will be calculated as follows (points earned + extra credit/500) x 100. Note that there is already information about extra credit written above. Do not ask for additional extra credit opportunities beyond what is provided on the syllabus or in class to the entire group.

**Grading scale:**

A = 90.0-100.0%  
B = 80.0-89.9%  
C = 70.0-79.9%  
D = 60-69.9%  
F < 60.0%

**Please note that grades will not be “rounded up”.** Therefore a 79.5% will be entered as a “C”. That might sound frustrating, and you might be thinking – seriously? Why can't Dr. Serafine can't just “give” us the 0.5 points to make that a “B”? The thing is, it isn't 0.5 points. It is 0.5% of 500 points, which is really 2.5/500 points. 2.5 points could have been easily earned by taking the blackboard quizzes, or from the in-class pop quizzes. Part of Dr. Serafine's teaching philosophy is that grades are *earned*, they are not “given”. The point of the extra credit opportunities (outlined above) is to make it easy for you to *earn* a better grade. **As such, “rounding up” will not occur in this class. No exceptions will be made.**

**Grade Disputes:** If you have any questions or disputes regarding grades, you must raise these in writing within ten days of the grade being released. **Grades will only be changed in cases of administrative error.** I do not hand back exams, if you wish to see your exam after it has been graded, you must schedule an appointment to come meet with me or with the TA. Typically, the TA will meet with you first and if you have lingering questions, I can also meet with you. If you want to file a formal complaint about grading, please contact the UTEP Psychology Department Chair or the UTEP grievance office.

Exams and assignments are graded based on instructions provided (e.g., you must circle answers for multiple choice, and write answers in the appropriate place on the exams for short answers). The instructor and the TA will only grade answers that are written in the appropriate place (e.g., on lined paper provided, on the blanks for fill in the blanks, not in the margins of the exam). Please read and follow the instructions carefully. If you fail to follow the instructions, points will be deducted.

### Class Schedule

**Lecture title bold, reading (to be completed prior to class time italicized)**

08/27	<b>Course overview</b> <b>State of the Field</b> <i>Chapter 1</i>
08/29	<b>The neuron: structure and function</b> <i>Chapter 1&amp;2</i>
09/03	no class- Labor day
09/05	<b>Membrane Potential</b> <i>Chapter 2&amp;3</i>
09/10	<b>Action Potential</b> <i>Chapter 3&amp;4</i>
09/12	<b>Group Day #1, Homework 1 due – Nernst Equation &amp; Synaptic Structure</b>
09/17	<b>Neurochemistry: Synaptic Transmission</b> <i>Chapter 5&amp;6</i>
09/19	<b>Neurochemistry: Neurotransmitter Systems</b> <i>Chapter 6&amp;7</i>
09/24	<b>Flex/Exam Review</b>
09/26	<b>Exam 1 covering chapters 1-7</b>
10/01	<b>Vision &amp; Olfaction</b> <i>Chapter 11&amp;12</i>
10/03	<b>Hearing &amp; Vestibular Systems</b> <i>Chapter 13&amp;14</i>
10/08	<b>Somatic Sensory System</b> <i>Chapter 9</i>
10/10	<b>Spinal &amp; Brain Control of Movement</b> <i>Chapter 17&amp;18</i>

- 10/15      **Pain**  
*Chapter 10*
- 10/17      **Flex/ Exam Review**  
**Group Day #2, Homework 2 due – Reflex & Spinal Cord**
- 10/22      **Exam 2 covering chapters 9-14, 17-18**
- 10/24      **Motivation, Feeding & Sex**  
*Supplemental Reading: <http://nobaproject.com/modules/drive-states>*
- 10/29      **Emotion**  
*Chapter 31*
- 10/31      **Language**  
*Chapter 33*
- 11/05      **Consciousness & Sleep**  
*Chapter 28*
- 11/07      **Addiction**  
*Supplemental Reading <http://nobaproject.com/modules/psychopharmacology>*
- 11/12      **Flex/ Exam Review**
- 11/14      **Group Day #3, Homework 3 due – Addiction & Imaging Techniques**
- 11/19      **Exam 3 covering chapters 28, 31, 33 and supplemental readings**
- 11/21      **Synaptic Plasticity**  
*Chapter 8 and 25*
- 11/26      **Learning & Memory**  
**Evolution of Cognitive Functions**  
*Chapter 30 and 34*
- 11/28      **Mental Illnesses**  
*Supplemental Readings:*
- <http://nobaproject.com/modules/history-of-mental-illness?r=NDY5NjlsNDE5Nzg%3D>
  - <http://nobaproject.com/modules/schizophrenia-spectrum-disorders?r=NDY5NjlsNDE5Nzg%3D>
- 12/03      **Exam Review/Flex**
- 12/05      **Group Day #4, Homework 4 due – LTP & Connectomics**

12/12

4:00-6:45pm\* note the time change, and extended time for final exam!

**FINAL EXAM** *50% of the final exam will be on material covered after Exam 3 (chapters 24-25, 30, 34 and supplemental readings). The other 50% of the exam will be cumulative information from the rest of the course. ANY material from lecture or reading might appear on the final exam, but material from lectures are more likely to appear on the final.*

**\*\*Please note: The syllabus is subject to change during the semester. I will always post the most recent version on blackboard.**

**Classroom Courtesy:** Please adhere to the following:

1. **Don't come late.** If you will be more than 10 minutes late to class, do not come that day.
2. **Don't leave early.** Plan to stay seated quietly for the entire class period—packing up early prevents others from hearing lecture and announcements. I generally end class at least 2-3 minutes before the official end time of the class, so you will have ample time to get where you are going. If your schedule prevents you from staying until the end of class, please change your schedule.
3. **No phones.** Do not use your cell phone or text messaging device during class— please turn these devices off.
4. **No surfing.** You are welcome to bring your laptop/iPad to take notes, but not for any other purpose. Using laptops to play movies or surf the web is extremely distracting to other students.
5. **No side conversations.** While I highly encourage students to ask questions during class, please refrain from side conversations not related to the larger class discussion. This is very disruptive—students frequently complain that they cannot hear the lecture/films because of other students' conversations.

If you engage in these activities, you are preventing your fellow students from learning. As such, you will be asked to leave the classroom. Don't let other students distract from your learning experience—if you see others engaging in these activities, please ask them to stop.