

**Neuroanatomy Course Syllabus**  
**PSYC6355 (CRN 19374) & PSYC4345 (CRN 19368)**  
**Fall 2022**

**Instructor:** Eddie Castañeda, Ph.D.  
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**Office Hrs:** T: 10:00 am – 12:00 pm  
T, Th: 12:00 pm – 1:30 pm  
Other Times Can Be Negotiated

**Teaching Assistant:** Valeria Garcia  
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**Class Time:** T; 4:30 p.m. – 7:20 p.m.  
**Location:** PSYC 105

**Course Description:**

This course is intended to provide you with an opportunity to learn neuroanatomy in depth and detail. Emphasis will be on the human brain, with many references to lower vertebrate (and sometimes invertebrate) nervous systems. Acquisition of detailed information will be largely your responsibility through self and small group study. You will be expected to learn the locations, circuitry and functions of various structures. You will be expected to identify structures in whole brains, brain slices and functional pathways along several levels of the central nervous system. You will be expected to ask questions: of the material, of yourself, and of your classmates. Information will be presented through lectures, readings, and laboratory work with sheep brains. Active participation is a real requirement for this course. You are also encouraged to attend various departmental or university seminars on pertinent topics.

There is an enormous body of knowledge concerning the anatomy of the nervous system, and courses are taught in many universities stressing only the connections from one region of the brain to another. While this is indeed important information, it is only marginally interesting, say, in a manner similar to memorizing the patterns of a leopard's spots. While this course provides a generous dose of "the basics" in neuroanatomy, what makes neuroanatomy interesting is the application of this knowledge to human behavior. This course attempts to provide some of this link, but its primary purpose is to provide you with the fundamentals of neuroanatomy so that you are prepared to undertake other advanced courses with more functional emphases.

**Texts:**

**Required:**

1) Neuroanatomy: Text and Atlas, 4<sup>th</sup> Ed. (2012) Martin, John H., McGraw-Hill Co.  
ISBN-13: 978-0071603966  
ISBN-10: 0071603964

2) The Sheep Brain: A Photographic Series (1991) Vanderwolf, C.H. & Cooley, R.K., London, Ont.: A.J. Kirbey Co.  
ISBN:9780920700037

**Exams and Grading:**

Grades will be determined by performance in the following course requirements.

	<u>PSYC6355</u>	<u>PSYC4345</u>
1) Exam 1	15%	20%
2) Exam 2	15%	20%
3) Exam 3	15%	20%
4) Laboratory Sheep Brain Practicum	15%	15%
5) Homework	10%	15%
6) Undergraduate Summaries of Grad Student Presentations		10%
7) Graduate: Literature Review (Term Paper)	15%	
8) Graduate: Oral Presentation	<u>15%</u>	
<b>Final Grade</b>	100%	<u>100%</u>

**1-3) Lecture Exams.** Three lecture examinations (**Sept 27, Nov 15, Dec 6**) will be administered on the dates specified in the lecture outline (see last page). These exams will cover all of the material presented in class, which is based on material from the text. There is overlap with some material from the sheep brain practicum. **None of the exams are formally comprehensive.** Exams will be given only on the days scheduled. Oral make-up exams will be available, but excuses for missing a regularly scheduled exam must be documented and justified.

**4) Sheep Brain Practicum.** Sheep brains will be dissected over a 3-week period to learn gross neuroanatomy and 3-dimensional organization of the brain. A sheep brain exam will be given on **October 25**.

**5) Homework Assignments.** Homework will require producing hand-drawn anatomical illustrations of pathways, relative position of tracts and nuclei in coronal sections of the brain, and descriptions about behavioral and physiological functions of specific brain regions. Usually, upon completing a chapter lecture, homework will be formally assigned, and it will be due at the beginning of the next class meeting.

**Note:** Late submissions will be deducted 15% after lecture begins, deducted 30% when submitted after class, and 75% when 1 day late. Homework that is later than 1 day will not be accepted.

**6) Undergraduate Summaries of Graduate Student Presentations.** Undergraduate students will write *brief* summaries of **5 graduate student presentations** to include the following information:

- a) basic neuroanatomy, include its embryological origin
- b) the function of the structure reported by the presenting student
- c) the following details about one of the experiments presented:
  - i) Subjects
  - ii) Independent Variable
  - iii) Dependent Variable
  - iv) Outcome reported from the data

*Thus, Undergraduate Students are required to be present for these presentations that take place immediately after the Third Exam on December 6. A 10% reduction in the final grade will result for any absent student.*

**Additional Requirements For Graduate Level Credit:**

**7) Graduate Literature Review.** There are three components to fulfill this requirement.

**a) Proposal (Due Sept 20).** Submit on a sheet of paper two areas of the brain (first choice, second choice) that you find interesting for a literature review. These will be used to narrow down a list of topics in which each student surveys a unique brain region, thus providing breadth to the class. Do not select a structure that you study in your research.

*Specific Requirements:*

- The instructor must approve the topic before you begin writing.
- Late submission of this proposal penalizes the term paper by one letter grade per day late.
- Handwritten documents are not acceptable – this must be electronically printed.

**b) Bibliography List (Due Oct 18).** Submit a list of **twenty** references that you have collected to read in preparation for your term paper. Include a photocopy of the first page of each of these 20 references. If you feel you cannot find an adequate number of references, you may change your line of research only with prior instructor approval. You may verify the appropriateness of specific articles before this requirement is submitted for grading.

*Specific Requirements:*

- The majority (>10) of manuscripts should be primary references.
- Include a photocopy of the abstracts from the original source of these primary references and the first page of any review articles you identify. Search engine outputs are not acceptable.
- Late submission of this bibliography will influence the term paper by 1-letter grade per day late.
- Handwritten documents are not acceptable – this must be electronically printed.

**c) Term Paper (Due Nov 15).** After surveying the articles from your bibliography, you will write a **brief literature review** that is organized as a cohesive story choosing at least 8 of the primary research reports from your bibliography. Your story should flow smoothly and reflect a relationship between the specific brain region and function (i.e., behavior) you have chosen to read about.

*Specific Requirements:*

- Describe the structure or pathway and review evidence about its function.
- The term paper will be double-spaced, font size 12, 1-inch all around margins, and a maximum 5 pages in length (shorter lengths can be acceptable).
- Include an appendix that provides illustrations of the brain structure or pathways.
- Include an appendix with descriptive statistics (graphs) illustrating brain/function relationships derived from your literature review.
- Include an appendix with a bibliography.
- Appendices do not count towards the 5-page limit.
- Late submission of this term paper will cost 1-letter grade per day late.
- Handwritten documents are not acceptable – this must be electronically printed.
- In concluding remarks, you should provide a synthesis of the current status of the problem, including a critical assessment by you. In this conclusion, I expect an intellectual evaluation that demonstrates understanding on your part, rather than reiterations of the authors' own conclusions.

**8) Graduate: Oral Presentations (Dec 6).** You will deliver an oral presentation based on the data reported in your term paper. You will present illustrations of the brain system(s) and follow up with an integrative treatise of scientific evidence that explores the behavioral role of your selected brain structure/pathway.

*Specific Requirements:*

- Allotted time for oral presentation: 10 min time limit + 5 min student discussion.
- No notes allowed.
- PowerPoint must be used – there is no limit on the number of slides, but the presentation must be cohesive and focus on one main idea only. Superfluous slides that drift from the primary focus of one idea will lead to grade penalties.
  - Illustrate the relevant neuroanatomy
  - Present data about the behavioral function of the brain structure/pathway, explain conclusions.
  - Provide your personal critical assessment; you should provide a synthesis of the current status of the problem, followed by an intellectual evaluation that demonstrates your understanding rather than reiterations of the authors' own conclusions. Are there weaknesses in the data or future investigations that need to be conducted?

**Tentative**

**Lecture Dates   Lecture Topic**

Aug 23	Review Syllabus + Chapt. 1: Organization of the CNS	
Aug 30	Chapt. 1 continued	
Sept 6	Chapt. 1 + Chapt. 2: Structural & Functional Organization of CNS	
Sept 13	Chapt. 2	
<b>Sept 20</b>	Chapt. 2	<b>Proposal Due</b>
<b>Sept 27</b>	<b>Exam 1 + Sheep Brain Dissection + Rat Brain Histology Orientation</b>	
Oct 4	Sheep Brain Dissection	
Oct 11	Sheep Brain Dissection	
Oct 18	Sheep Brain Dissection	
<b>Oct 25</b>	<b>Sheep Brain Practicum</b> + Chapt 7: The Visual System	<b>Bibliography Due</b>
Nov 1	Chapt. 7: The Visual System + Chapt 4 & 5: Somatic Sensation	<i>Oct 28 - Fall Drop/Withdrawal Deadline</i>
Nov 1	Chapt. 4 & 5: Somatic Sensation + Chapt. 10: Descending Motor Systems	
<b>Nov 8</b>	Chapt. 10: Descending Motor Systems	
<b>Nov 15</b>	<b>Exam 2</b> + Chapt. 13: Cerebellum	<b>Term Paper Due</b>
Nov 22	Chapt. 13 + Chapt. 14: Basal Ganglia	<i>Nov 24-25 - Thanksgiving Holiday</i>
Nov 29	Chapt. 14	
<b>Dec 6</b>	<b>Exam 3, Tuesday, 7:00 – 9:45 p.m. + Graduate Student Presentations</b>	

**Course Policies:**

**Statement on Fair Access to All Students:** If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at **747-5148**, or by email to **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**.

The instructor is not qualified to make assessments on special needs, so to protect all parties CASS provides assessment and gives direction to optimize student needs in these cases.

**Academic Dishonesty:** Please refer to UTEP's Policy Statement on Academic Dishonesty in the Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. 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. Academic dishonesty is an assault upon the basic integrity and meaning of a University. Cheating, plagiarism, and collusion in dishonest activities are serious acts which erode the University's educational and research roles and cheapen the learning experience not only for the perpetrators, but also for the entire community. It is expected that UTEP students will understand and subscribe to the ideal of academic integrity and that they will be willing to bear individual responsibility for their work.

**Grade Appeals.** To request reconsideration of a grade you must take the following steps.

- 1) Review the assignment/test item and its instructions.
- 2) Compare your work with the grading criteria, my comments, your textbook, and the instructions.
- 3) Wait at least 24 hours after the grade is given.
- 4) Submit an appeal in writing (typed, hard copy, absolutely no e-mail) within one week from the time the assignment or test is returned to the class (if absent on the day the assignment or test is returned, you forfeit your chance to appeal the grade).
- 5) Provide a clear, well-written argument explaining why your answer is correct or how your work met the instructions and criteria. This should most likely include a reference to a page in your textbook or another reputable source to back up your argument.
- 6) Indicate the grade you feel you earned.

NOTE: An appeal does not necessarily equate to gaining points. If all directions are followed, this only means I will carefully review your appeal.

**Conclusions.** 1) If you have a problem with handing in assignments on the due date, I will gladly accept these anytime earlier. 2) If you are unwilling to accept any of the above conditions, do not take this course. Your continued enrollment in this course beyond the first two weeks will be taken as evidence that you have read, understood, and unconditionally accepted these conditions. 3) For scheduling, only the test dates are immutable. All other dates are tentative and dependent on final class enrollment size.