

BEHAVIORAL NEUROSCIENCE

PSYC6372 (CRN 16530)

PSYC4345 (CRN 14863)

SYLLABUS – Fall 2023

University of Texas at El Paso

Department of Psychology

Class Time: MW, 3:00 – 4:20 p.m.

Location: Quinn Hall Room 103

Instructor: Eddie Castañeda, PhD

Office: PSYC 216A

e-mail: ecastaneda9@utep.edu

Office Hrs: MW: 12 Noon – 2:30 pm

Other Times Can Be Negotiated

Course Description:

For this course, you are expected to possess an introductory background in behavioral neuroscience - it will be assumed that you understand basic concepts of anatomy, biology, biochemistry, physiology and psychology (e.g., successful completion of a course similar to PSYC4324/Psychobiology or PSYC2324/Introductory Neuroscience is adequate). The required text for this course reviews these basics in Chapters 1, 3, 4, 5, 6, and 7. This course will begin at advanced chapters! Although we will not directly refer to this information, it provides the foundation for thought (no pun intended) for the functional concepts that we will cover at a molar or organismal level. So, you might believe that you can get away with a minimal understanding of this type of information in this course, but this is tantamount to believing you can understand the computer output of an ANOVA without understanding fundamental concepts of sampling distributions and probability theory.

The emphasis of this course is to treat behavioral neuroscience from the perspective of neuropsychology. This means that you will learn about the anatomical and physiological organization of the central nervous system as this relates to behavior. Neural mechanisms underlying relations between brain and behavior rather than cognitive theories are the crux of this course, yet we will often delve into cognitive function as it is organized around neurophysiology. Your course textbook is titled "Fundamentals of Human Neuropsychology," yet you will find it is deeply embedded with knowledge gained from animal research. Many students are surprised by this discovery that most of our understanding about human nervous system function derives from other animals. You will come to understand why this is the case as you progress through this course.

In this course you will gain some literacy skills in behavioral neuroscience by evaluating the literature, posing questions, scrutinizing the strengths and limitations of the scientific method, and formulating hypotheses. You should be prepared and be willing to participate actively in this course by spending an essential amount of time preparing for in class discussions and writing a term paper. These components, in part, are determinants for your course grade.

You will be expected to come to class already prepared. During student-led discussions, you will be expected to contribute thoughtful ideas, so attendance is mandatory and will be reflected in calculating final grades. If you cannot commit to this, do not enroll in this class.

Required Text:

B. Kolb & I.Q. Whishaw, Fundamentals of Human Neuropsychology (8th Ed.), New York: Worth Publishers, 2021.
Paperback ISBN: 9781319247164 – Loose-Leaf ISBN: 9781319364267 – E-book ISBN: 9781319364274

Behavioral Neuroscience - Exams and Grading

Grades will be determined by performance on the following requirements:

	<u>PSYC6372</u>	<u>PSYC4345</u>
1) 1 st Lecture Exam	15%	10%
2) 2 nd Lecture Exam	15%	10%
3) 3 rd Lecture Exam	15%	10%
4) Tickets In	10%	5%
5) Student Chapter Presentations	20%	30%
6) Term Paper	15%	20%
7) <u>Data Blitz - Based on Research Reviewed in Term Paper</u>	10%	15%
Total	100%	100%

1-3) In-Class Exams (3 Exams = Total 45% for Grad sx/30% for Undergrad sx):

- All examinations will cover only material presented during lecture.
 - PowerPoint lectures are available through Blackboard as pdf files for download to facilitate note taking.
 - The course examinations will be administered only on the dates specified in this syllabus (see p. 4).
 - There are no make-up exams. Other arrangements to take the exam are possible with justified excuses.
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4) Tickets In (10%/5%): At the beginning of each class will be due a one-page, typed summary of the “Portraits” that begin each chapter. See schedule on **page 4** to determine when each Ticket In is due.

All summaries should include 3 components *in the following order*:

- a) a *list of definitions* for concepts that are discussed in the Portrait,
- b) an *objective* synopsis of the theme presented in the Portrait,
- c) a *subjective* reflection on the theme in the Portrait.

☞ Tickets In are not accepted once the instructor has begun lecture. **NO EXCEPTIONS**

5) Term Paper – Convergence of Animal & Human Studies in Neuropsychology (15%/20%):

- a) You will submit a term paper with a 4-page maximum text on **November 20**. You will select two primary research articles from the scientific literature, one from animal research and one from human research, that deal with converging evidence about the same topic that is covered by your chosen section within a textbook chapter. Any topic within that chapter can be chosen, BUT you must ascertain with our fellow classmates that nobody covers the same topic: each student must choose a topic that others have not chosen. To facilitate unique term papers (and Data Blitz presentations), the class will meet off campus (due to a football game) on **Wednesday, Oct. 18**. Since classtime is devoted to this process, absences will not justify having chosen overlapping topics.
- b) **This is not a literature review.** For your term paper, you will describe (1) the general problem, (2) specific experimental hypotheses, and (3) at least one graph from each manuscript to compare/contrast human and animal data (A total of 2 graphs is sufficient). Be clear about operationism used to define independent, dependent and extraneous (controlled and unexplained) variables from each set of data.
- c) Your term paper will include: **1)** a title page, **2)** the body of your text, and **3)** an appendix at the end of your paper with the following items: reference page, tables, illustrations, and other visual aids. Except for the title page, these should be placed in an appendix at the end of the paper. You must include these appendices.
These additional pages do not count as a part of the 4-page text limit.
- d) **Formatting:** Term papers will be typewritten in Arial or Calibri font, font size 12, 1-inch all around margins, double-spaced. Handwritten manuscripts are, like petroglyphs, archaic - these will not be graded.
- e) **Late papers** - will be assessed a one letter grade reduction per day up to 3 days; thereafter, papers are not accepted. Late days include Saturdays and Sundays. The paper is considered submitted when it is in the hands of the instructor. I do not accept electronic submissions – don’t even think of it and don’t ask! Term papers will be considered submitted when they are physically in the hands of the instructor, not his mailbox.

See the grading rubric at the back of this syllabus (p 6).

6) Student Chapter Presentations (20%/30%):

Individual students will select a section from a textbook chapter, unique from other students, to deliver a 5-min presentation. These presentations will take place on **December 4 & 6**. See the grading rubric at the back of this syllabus (p. 7).

- Choose a major concept of personal interest to create a maximum 5-min overview.
- You will be expected to describe a behavioral disorder and the underlying neurology as it is covered from the textbook. You will not need to do a literature search for this presentation, but you must present a cohesive story.
- The order of presentations will be randomly drawn; so, you must be ready to deliver at any time during presentations.

The following textbook chapters are eligible choices for students to choose:

- Chapter 11: Cerebral Asymmetry
 - Chapter 12: Individual Differences in Cerebral Organization
 - Chapter 17: Cortical Networks & Disconnection Syndrome
 - Chapter 18: Learning & Memory
 - Chapter 19: Language
 - Chapter 20: Emotion & the Social Brain
 - Chapter 21: Spatial Behavior
 - Chapter 22: Attention and Consciousness
 - Chapter 23: Brain Development and Plasticity
 - Chapter 24: Neurodevelopmental Disorders
 - Chapter 25: Plasticity, Recovery, and Rehabilitation of the Adult Brain
 - Chapter 26: Neurological Disorders
 - Chapter 27: Psychiatric and Related Disorders
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7) Data Blitz (10%/15%):

On **December 11**, you will be required to present two graphs of data (one graph based on animal research and the second based on human research) from your term paper, and the audience is expected to contribute actively to a meaningful discussion about the comparative issues. It will be important that you follow the mechanics outlined for presenting the graph. See the grading rubric at the back of this syllabus (p. 8).

Requirements:

- a) PowerPoint presentation with a maximum 5-min time limit
 - b) Provide a brief background and define the hypotheses
 - c) Neuroanatomy Illustration – describe the brain region of interest to the data you present
 - d) Explain the two graphs using the mechanics outlined by the grading rubric
 - e) Provide a conclusion
- The order of presentations will be randomly drawn; so, you must be ready to deliver at any time during presentations.
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Tentative Course Outline

<u>Dates</u>	<u>Topics</u>	<u>Ticket In</u>	<u>→</u>	<u>Due Date</u>
Aug 28, 30	Introductions, Course Overview Ch 2: Origins of the Human Brain and Behavior			
Sept 4	Labor Day Holiday – No Class!			
Sept 6, 11, 13, 18	Ch 2 Cont. Ch 3: Nervous System Organization	Ch 2		Sept 11
Sept 20, 25, 27, Oct 2	Ch 3 Cont. 10: Principles of Neocortical Function	Ch 3 Ch 10		Sept 25 Oct 2
Oct 4	Ch 8: Organization of the Sensory Systems			
Oct 9	 Exam 1 (Chapters 2, 3, 10)			
Oct 11, 16	Ch 8 Cont. Ch 9: Organization of the Motor Systems	Ch 8		Oct 16
Oct 18	 Finalize Selection of Unique Chapter Lectures - MEET OFF CAMPUS due to football game			
Oct 23, 25	Ch 9 Cont.	Ch 9		Oct 25
Oct 30	Ch 13: The Occipital Lobes			
Nov 1	 Exam 2 (Chapters 8, 9)			
Nov 3	 Drop/Withdrawal Deadline!			
Nov 6, 8	Ch 13 Cont. Ch 14: The Parietal Lobes	Ch 13		Nov 6
Nov 13, 15	Ch 14 Cont. Ch 15: The Temporal Lobes	Ch. 14		Nov 13
Nov 20, 22	Ch 15 Cont Ch 16: The Frontal Lobes  Term Paper Due (Nov 20)	Ch 15		Nov 22
Nov 23, 24	HAPPY Thanksgiving Holiday – We do not meet on these days anyway			
Nov 27	Ch 16 Cont.	Ch 16		Nov 27
Nov 29	 Exam 3 (Chapters 13, 14, 15, 16)			
Dec 4, 6	 Student Presentations On Chapters of Interest			
Dec 11	 Data Blitz – Monday, 1:00 pm-3:45 pm (University-Scheduled Exam Time) <i>Attendance is Required; 20% Reduction in Final Grade Due to Absence</i>			

Policy Statements

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.

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

Statement on Fair Access to All Students: If you have or suspect a disability and need accommodations you should contact The Center for Accommodations and Support Services (CASS) at 747-5148 or at cass@utep.edu or come by Room 106 Union East Building. 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 Integrity

The University of Texas at El Paso prides itself on its standards of academic excellence. In all matters of intellectual pursuit, UTEP faculty and students must strive to achieve excellence based on the quality of work produced by the individual. In the classroom and in all other academic activities, students are expected to uphold the highest standards of academic integrity. Any form of scholastic dishonesty is an assault to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. It is imperative, therefore, that the members of this academic community understand the regulations pertaining to academic integrity and that all faculty and students insist on adherence to these standards.

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, and any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the **Handbook of Operating Procedures (HOP)** (available through the **Dean of Students Office**) may result in sanctions ranging from disciplinary probation, to failing a grade on the work in question, to a failing grade in the course, to suspension or dismissal, among other and any combination.

Conclusion: If you are unwilling to accept any of the above course requirements or university policy on academic behavior, 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 them. Please review UTEP's Handbook of Operating Procedures; I will seek the fullest extent of sanctions possible for any academic dishonesty that occurs in this course.

Behavioral Neuroscience Term Paper Scoring Rubric

Student Name: _____

Topic: _____

Main Idea:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

Background (General Problem):

Hypotheses:

Animal Data:

Behavioral Issues:

Content:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

Neurophysiological Determinants:

Content:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

Independent Variable(s):

Graph Dependent Variable(s):

Extraneous Variables:

Human Data:

Behavioral Issues:

Content:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

Neurophysiological Determinants:

Content:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

Independent Variable(s):

Graph Dependent Variable(s):

Extraneous Variables:

Integration of Animal and Human Data:

D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
63	65	68	73	75	78	83	85	88	93	95	98

Overall Clarity:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

Other Required Components:

D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
63	65	68	73	75	78	83	85	88	93	95	98

- 1) Title Page
- 2) Reference Page
- 3) Typewritten (sans serif)
- 4) Font size 12
- 5) 1-inch margins all around
- 6) Double Spaced

Days Late: 1 = -10% 2 = -20% 3 = -30% >4 = 0

Student Chapter Presentation Scoring Rubric

Student Name: _____

Chapter: _____

Main Concepts:

D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
63	65	68	73	75	78	83	85	88	93	95	98

Clarity:

Verbal Content:

D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
63	65	68	73	75	78	83	85	88	93	95	98

PowerPoint Content:

D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
63	65	68	73	75	78	83	85	88	93	95	98

Behavioral Issues:

D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
63	65	68	73	75	78	83	85	88	93	95	98

Neurophysiological Determinants:

Content:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

Behavioral Neuroscience Data Blitz Scoring Rubric

Student Name: _____

1) Main Idea (Hypotheses & Background):

Content:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
	63	65	68	73	75	78	83	85	88	93	95	98

2) Brain Illustration:

Details:	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
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Clarity: (illustration)	D(-)	D	D(+)	C(-)	C	C(+)	B(-)	B	B(+)	A(-)	A	A(+)
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3) Data Presentation:

Animal Data

Reference: _____

X-Axes: D- D D+ C- C C+ B- B B+ A- A A+
Operational Definition:

Y-Axes: D- D D+ C- C C+ B- B B+ A- A A+
Operational Definition:

Groups: D- D D+ C- C C+ B- B B+ A- A A+
Experimental Design:

Effect: D- D D+ C- C C+ B- B B+ A- A A+

Clarity: D- D D+ C- C C+ B- B B+ A- A A+
(illustration)

Human Data

Reference: _____

X-Axes: D- D D+ C- C C+ B- B B+ A- A A+
Operational Definition:

Y-Axes: D- D D+ C- C C+ B- B B+ A- A A+
Operational Definition:

Groups: D- D D+ C- C C+ B- B B+ A- A A+
Experimental Design:

Effect: D- D D+ C- C C+ B- B B+ A- A A+

Clarity: D- D D+ C- C C+ B- B B+ A- A A+
(illustration)

4) Conclusion:

D- D D+ C- C C+ B- B B+ A- A A+

Discussants