

**Cognitive Neuroscience
Psychology (PSB) 5035
spring 2006**

Instructor:	James E. Arruda, Ph.D.
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Office Hours:	Fort Walton Beach: M 7:25 p.m. - 8:25 p.m.; Pensacola: TR; 11:00 a.m. - 12:00 p.m.; Pensacola: TR 1:00 p.m. to 2:00 p.m.; Pensacola: W 10:00 a.m. to 11:00 a.m.; or by appointment
Course Location:	Building 41; Room 136
Course Time:	TR 2:30 p.m. to 3:45 p.m.
Required Text:	Kolb, B & Whishaw, I.Q. (2003). Fundamentals of human neuropsychology (5 th ed). New York, NY. W.H. Freeman and Company. ¹

Description of Course and Course Objectives

The Cognitive Neuroscience course will provide the student with an advanced study of topics quintessential to the cognitive neuroscience field, including neocortical function and the lateralization of language and spatial processes. Additional topics will include the cellular and anatomical organization of the central nervous system, neurochemistry, and technological advances in brain imaging techniques that have advanced our understanding of brain function. It is my hope that once you have successfully completed this course that you will have a better appreciation for those neuroanatomical and neurophysiological systems that influence human behavior.

Student Learning Outcomes

At the completion of Cognitive Neuroscience, the successful student should be able to:

- identify the neuroanatomy associated with the visual, auditory, somatosensory, olfactory, gustatory, and motor systems;
- identify the neuroanatomy associated with the neocortex;
- compare and contrast major perspectives within the field of cognitive neuroscience;
- describe advantages and limitations of major theoretical perspectives;

¹ Note that this textbook should come bundled with two Special Editions of Scientific American—*The Hidden Mind* and *Improving the Mind and Brain*—and a CD ROM entitled *Foundations of Behavioral Neuroscience*.

- demonstrate through written means an advanced understanding of neurocognitive processes as they pertain to human experience and behavior;
- demonstrate through oral means an advanced understanding of neurocognitive processes as they pertain to human experience and behavior;
- use theories to explain and predict neurocognitive processes;
- think and read critically;
- integrate the course content to the broader area of Psychology as the scientific study of human behavior and cognition.

Prerequisites

A student must first successfully complete either Sensation and Perception or Brain, Behavior, and Experience (PSB4003), or the equivalent of either. The purpose of this prerequisite is to ensure that a student is adequately prepared for advanced discussions of human, neurocognitive processes.

Expectations for Academic Conduct/Plagiarism Policy--Honor System

As a student of The University of West Florida, it is expected that you abide by the following pledge:

As members of the University of West Florida, we commit ourselves to honesty. As we strive for excellence in performance, integrity—personal and institutional—is our most precious asset. Honesty in our academic work is vital, and we will not knowingly act in ways that erode that integrity. Accordingly, we pledge not to cheat, nor to tolerate cheating, nor to plagiarize the work of others. We pledge to share community resources in ways that are responsible and that comply with established policies of fairness. Cooperation and competition are means to high achievement and are encouraged. Indeed, cooperation is expected unless our directive is to individual performance. We will compete constructively and professionally for the purpose of stimulating high performance standards. Finally, we accept adherence to this set of expectations for academic conduct as a condition of membership in the UWF academic community, as defined in the UWF Student Handbook: <http://www.uwf.edu/uwfmmain/stuHandbk/>.

Additional Assistance

Students with special needs who require specific examination-related or other course-related accommodations should contact Barbara Fitzpatrick, Director of Disabled Student Services (DSS), dss@uwf.edu, (850) 474-2387. DSS will provide the student with a letter for the instructor that will specify any recommended accommodations.

Electronic Submission of Assignments

Students bear sole responsibility for ensuring that papers or assignments submitted electronically are received in a timely manner and in the electronic format(s) specified by me. Students are therefore obliged to have their e-mail client issue a receipt verifying that the document has been received. Students are also strongly advised to retain a copy of the dated submission on a separate disk. I will acknowledge receipt of the assignment if I receive it.

Cell Phone and Pager Usage

Out of courtesy for all those participating in the learning experience, all cell phones and pagers must be turned off before entering any classroom event.

Examinations, Assignments, Class Attendance, and Grading

1) Examinations (35% of Final Course Grade)

A multiple choice examination will be administered at the completion of the course during the final examination period. The final examination will be designed to assess each student's grasp of core content material found within the textbook chapters. Questions comprising the final examination (approximately 220) will be constructed by students throughout the semester. Generated questions will be made available to the students of the course as they become available. The final examination will be graded on a common 0% to 100% scale.

2) Written Assignment (35% of Final Course Grade)

Each student will be responsible for writing an original manuscript that will examine a topic in the cognitive neuroscience field. Students are expected to critically examine the topic and to integrate information from supplemental sources, including original research and review articles. The organization of the manuscript will be the decision of the student, but should be well thought-out and designed to provide the reader with the most **concise/comprehensive** representation of the topic possible—remember you are being graded. All topics must receive my approval prior to the initiation of the investigation. Manuscripts will be graded for clarity and comprehensiveness on a common 0% to 100% scale.

3) Test Question Generation (15% of Final Course Grade)

Each student will be responsible for constructing a single multiple choice question for each textbook chapter covered (10). Each multiple choice question should be based upon textbook material and should also include four potential answers (a, b, c, d) and the page number from which the answer to the question can be obtained. Questions for a particular chapter are due on the day that the chapter is discussed. Questions should be submitted to me in a Microsoft word file using e-mail. My e-mail address is jarruda@uwf.edu. Test question generation will be graded on a common 0% to 100% scale, with perfect test question generation resulting in a score of 100%.

4) Class Attendance (15% of Final Course Grade)

Students are expected to attend each regularly scheduled class meeting. Class attendance will be graded on a common 0% to 100% scale, with perfect attendance resulting in class attendance score of 100%.

5) Grading

Each student's final course grade will be a weighted composite of examination performance (35%), performance on the written (35%) and test question generation assignments (15%), as well as class attendance (15%). A student can calculate his or her final course grade by using the following formula.

$$\text{Final Grade} = (\text{Exam} \cdot .35) + (\text{Written Ass.} \cdot .35) + (\text{Test Question Gen.} \cdot .15) + (\text{Attendance} \cdot .15)$$

Your final letter grade will be assigned as follows:

A	$\geq 93\%$
A-	90% to 92%
B+	87% to 89%
B	83% to 86%
B-	80% to 82%
C+	77% to 79%
C	73% to 76%
C-	70% to 72%
D+	67% to 69%
D	60% to 66%
F	$\leq 59\%$

**Tentative Course Syllabus
Psychology (PSB) 5035**

<i>Month</i>	Day	Date	Topic	Reading
January	T	10	Introduction	
	R	12	Repairing the Damaged Spinal Cord	Article(s)
	T	17	Organization of the Nervous System	Chapter 3
	R	19	Repairing the Damaged Spinal Cord	Article(s)
February	T	24	New Nerve Cells for the Adult Brain; The Other Half of the Brain	Article(s)
	R	26	The Structure and Electrical Activity of Neurons	Chapter 4
	T	31	New Nerve Cells for the Adult Brain; The Other Half of the Brain	Article(s)
	R	2	Communication Between Neurons	Chapter 5
	T	7	Communication Between Neurons	Chapter 5
	R	9	Visualizing the Mind; Fact or Phrenology	Article(s)
	T	14	Imaging the Brain's Activity	Chapter 7
	R	16	Visualizing the Mind; Fact or Phrenology	Article(s)
March	T	21	Principles of Neocortical Functioning	Chapter 10
	R	23	Principles of Neocortical Functioning	Chapter 10
	T	28	Emotion, Memory, and the Brain; Making Memories Stick; The Lowdown on Ginkgo Biloba; Erasing Memories	Article(s)
	R	2	Memory	Chapter 18
	T	7	Emotion, Memory, and the Brain; Making Memories Stick; The Lowdown on Ginkgo Biloba; Erasing Memories	Article(s)
	R	9	How we Came to be Human; How Does the Human Brain Process Language; From Prototools to Language	Article(s)
T	14	The Origins of Language	Chapter 19	
R	16	SEPA		
T	21	Spring Vacation		
R	23	Spring Vacation		

	T	28	How we Came to be Human; How Does the Human Brain Process Language;	Article(s)
	R	30	From Prototools to Language The Neurobiology of Fear; Right Brain may be Wrong	Article(s)
April	T	4	Emotion	Chapter 20
	R	6	The Neurobiology of Fear; Right Brain may be Wrong	Article(s)
	T	11	Sex Differences in the Brain; The Maternal Brain	Article(s)
	R	13	Spatial Behavior	Chapter 21
	T	18	Sex Differences in the Brain; The Maternal Brain	Article(s)
	R	20	The Movie in Your Head; The Problem of Consciousness; The Puzzle of Conscious Experience; How the Brain Creates the Mind; Can Science Explain Consciousness;	Article(s)
	T	25	Attention, Mental Images, and Consciousness	Chapter 22
	R	27	The Movie in Your Head; The Problem of Consciousness; The Puzzle of Conscious Experience; How the Brain Creates the Mind; Can Science Explain Consciousness;	Article(s)
May	T	2	Final Exam (2:00 p.m. – 4:30 p.m.)	3, 4, 5, 7, 10, 18, 19, 20, 21, 22