

**Prerequisite:** First level course in science and technology (SA)

**Course Time:** Monday/Wednesday/Friday 10:40AM – 11:30AM

**Location:** Beury Hall Room 160

**Professor:** Tania Giovannetti, Ph.D.

Office Location: Weiss Hall Room 475

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Office hours: Mon 4:00- 5:00; Tues 12:00-1:00PM; Wed 12:00PM – 1:00PM; or by appointment

**Guidelines for contacting the professor:** Students can expect a response to email or phone messages within a day or two. When messages are sent on Friday, they will likely be returned by Monday or Tuesday of the following week.

**Disability disclosure:** Any student who has need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex to coordinate reasonable accommodations

**Course introduction and objectives:** Cognitive Neuroscience is the study of cognitive functions and their neurological substrates. In other words, this field explores how parts of the brain work together to produce human thoughts and behaviors. It is a relatively new field that formed in the 1970s as cognitive psychologists began incorporating new neuroimaging technology into their study of language, memory, and other thought processes. Since then, the field has expanded to include topics that were not the focus of traditional cognitive science, including emotion and consciousness.

Although cognitive neuroscience is a new field, it has historical roots in cognitive psychology, behavioral neurology, and neuropsychology. Cognitive neuroscientists draw from the methods of these traditional fields, including electrophysiology, the study of neurological syndromes and brain damage, animal research, and others. Thus, cognitive neuroscientists explore the brain and mind from multiple perspectives. The ultimate goal of the field is to use multiple methods to find corroborating support for theories of neurocognitive functions.

By the end of this course students will

- 1) be familiar with basic neuroanatomy and physiology of the nervous system;
- 2) understand neuroscience methodologies; and
- 3) have knowledge of current neurocognitive theories of memory, language, attention, action control, emotion, and other mental operations.

**Course readings & supplies:** Books are available at the Temple University Bookstore (in the Student Center) and Zavelle Bookstore (1520 N. Broad St.). You can also purchase books through various on-line vendors.

Gazzaniga, M.S., Ivry, R.B., Mangun, G.R. (2002). *Cognitive Neuroscience: The Biology of the Mind*, Second Edition. Norton: NY

Pinel, J.P.J. & Edwards, M. (1998). *A Colorful Introduction to the Anatomy of the Human Brain: A Brain and Psychology Coloring Book*. Allyn & Bacon: Boston.

Sacks, O. (1990). *The Man Who Misook His Wife for a Hat and Other Clinical Tales*. Harper Perennial: NY.

Colored pencils and/or crayons are required.

**Course Requirements:**

*Class attendance and participation (10 points):* Attendance will be sampled randomly. If you are not present when attendance is taken, then you will have 1 point deducted from your grade. Points for participation are given for “minute papers.” These are short in-class writing assignments that are designed to serve as a springboard for that day’s class discussion. These papers are graded on a pass-fail scale (i.e., 1 point or 0). Students are also credited for participation in class discussions. In addition, lecture material is not always covered in the course reading. Therefore, if you do not come to class, you will miss important material for the examinations.

*Class assignments (20 points):* A total of 21 coloring book assignments are due during the term. You must hand in the assignment on the day that it is due to receive full credit. You have a choice of tearing the assigned page from the book or making a copy of the page. However, I will accept only the assigned page, not the entire book. You will earn 1 point for each complete assignment if it is handed in on the due date. Late assignments will be given partial credit (.5 point). Twenty of the 21 assignments are REQUIRED (you may decide which 20 assignments to complete). If you complete all 11 assignments on time you will receive one extra-credit point. If you complete the extra credit assignment late, you will receive .5 extra credit points.

*Examinations:* There will be three in-class examinations during the semester as well as a final exam. The exams will include primarily multiple-choice questions. Some short answer questions and questions requiring you to draw and label neuroanatomical structures will also be included. However, if you have difficulty with multiple-choice test format, you might have difficulty getting an A or B in this course.

Examinations will be based on both lecture and readings; in many cases lecture material is not duplicated in the course readings. Three of the four exams will count towards your final grade. The fourth exam score-with the lowest grade- will be dropped. If you are happy with your first three exam scores, you do not have to take the final.

*Extra Credit:* You will have the opportunity for extra credit by completing the extra coloring book assignment. Extra credit questions will also be included on all examinations, except Exam 1 (see grading table below). No other extra credit assignments will be offered in the course.

**Grading:**

	<b>possible points</b>	<b>possible extra credit points</b>
Class attendance and participation	20	0
Coloring book assignments	20	1
Exam 1	20	0
Exam 2	20	5
Exam 3	20	5
Total	100	11

The final course grade is based on total points (not on a curve). Letter grades are assigned as follows:

<b>Total Points</b>	<b>Final Grade</b>
95-100+	A
90-95	A-
86 - 89	B+
83 - 85	B
80 - 82	B-
76 - 79	C+
73 - 75	C
70 - 72	C-
66 - 69	D+
63 - 65	D
60 - 62	D-
0 - 59	F

***Make up policy:*** There are no make-up examinations/assignments except in extreme, extenuating circumstances, for which sufficient supporting documentation will be required. THERE ARE NO EXCEPTIONS! If you miss an exam, that will automatically be the grade that is dropped when calculating your final grade.

**Disclaimer:** The course schedule is subject to change upon the instructor's discretion. Please check backboard on a weekly basis for announcements.

**Course Schedule:**

Date	Topic (Note)	Readings			ASSIGNMENTS
		Gazzaniga	Sacks	Pinel	
M Aug 30	Introduction	1	Introduction	Preface, To the Reader, How to Use this Book	
W Sept 1	History	1			
F Sept 3	History	1			
M Sept 6	<b>(University Holiday)</b>			2.1, 2.2, 2.3, 5.1, 5.2, 5.3, 5.6, 7.1, 7.2,	
W Sept 8	Gross Anatomy	3		7.3, 7.5, 7.6, 7.7, 7.8, 8.1, 8.2, 8.6, 9.1, 9.2, 9.5, 9.6, 10.1, 10.2, 10.4, 10.5, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4, 12.5	2.1, 2.2, 2.3
F Sept 10	Basic Functional Anatomy	3			7.2
M Sept 13	Basic Functional Anatomy <b>(Last Day to Drop Course)</b>	3			7.3
W Sept 15	Methods	4			7.6
F Sept 17	Methods	4			7.7
M Sept 20	Methods	4			7.8
W Sept 22	Methods	4			5.4
F Sept 24	Review				prepare for review session
M Sept 27	Exam 1				
W Sept 29	Visual Pathway	5			
F Oct 1	Cortical Visual Areas	5, 6			8.1
M Oct 4	Cortical Visual Areas	5, 6		8.1, 8.2	
W Oct 6	Disorders of Visual Processing	5, 6	1, 5		8.2
F Oct 8	Class Discussion of Sacks Cases 1 & 5		1, 5		prepare for class discussion
M Oct 11	Attention	7			11.5
W Oct 13	Attention	7		11.5	
F Oct 15	Disorders of	7	4, 8		

	Attention				
M Oct 18	Class discussion of Sacks Cases 4 & 8	7	4, 8		prepare for class discussion
W Oct 20	Review				prepare for review session
F Oct 22	Exam 2				
M Oct 25	Short-term/ Working Memory	8		10.1, 10.2, 10.4, 10.5,	10.1
W Oct 27	Episodic Memory	8			10.2
F Oct 29	Semantic Memory	6 (p 221 - 226), 9 (p. 351 - 358)			10.4, 10.5
M Nov 1	Case Discussions		2, 16,12		
W Nov 3	What is Language?	9			
F Nov 5	Language and the Brain	9		12.1, 12.2, 12.3,	12.1
M Nov 8	Disorders of Language	9	9, 23		
W Nov 10	Case Discussions	8			prepare for class discussion
F Nov 12	Review				prepare for review session
M Nov 15	Exam 3				
W Nov 17	Basic Motor Functions	11		7.8, 9.5, 9.6,	7.8
F Nov 19	High Level Action Control	11	10,14	12.4	12.4
M Nov 22		12			
W Nov 24	Frontal Lobes/Executive Functions	12			
F Nov 26	<b>(Thanksgiving Holiday)</b>				
M Nov 29	Emotion	13		11.4	11.4
W Dec 1	Emotion	13	11, 13, 15,		
F Dec 3	Decision Making	13	17, 18, 19,	12.5	12.5
M Dec 6	Decision Making Disorders		20		
W Dec 8	Final Review				prepare for review session

F Dec 17	FINAL EXAM (8:30 AM - 10:30 AM)				
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