

Psychology 320: Cognitive Neuroscience  
Fall 2012

**Instructor:** Dr. Sarah Johnson  
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**When:** T/R 8:55-10:05am  
**Where:** 117 PPHAC  
**Office hours:** T & R 1-3pm,  
and by appt.

**Main Course Objective:** We will learn about how the brain serves as the source for what researchers consider “higher function” (e.g., language, planning, complex aspects of perception and memory, social behavior, etc.). There will be an emphasis on looking at first hand research, particularly involving patients and neuroimaging techniques.

**Specific Course Objectives:**

1. **Think critically** about important theories and findings from cognitive neuroscience; includes knowing some of the important researchers in these areas, paradigms employed, and learning the locations and functions of distinct neuroanatomical regions.
2. Understand the bases of neuroscience methodologies, with an emphasis on strengths and weaknesses of each and how they can be used in coordination with other types of research to offer *converging evidence*.
3. Look at how information from the domain of cognitive neuroscience is portrayed in public forums and develop a **critical eye** toward such information, developing/enhancing your skills at determining credible versus questionable depictions of such information with the goal of becoming a **better informed consumer** of publically available neuroscience-based information.
4. Engage in **interactive discussion** and **creative thinking** about ideas in Neuroscience to better enhance your own learning about this field.

**Textbook:** *The Student’s Guide to Cognitive Neuroscience*, 2<sup>nd</sup> ed., by Jamie Ward. Additional readings will be journal articles, made available in class or via Blackboard, or researched by you in conjunction with specific assignments. Suggested: *A Colorful Introduction to the Anatomy of the Human Brain*, by Pinel (can be borrowed from me to make copies of select portions).

**Attendance:** Attending class will benefit you for multiple reasons: learning how to learn and think critically, discussion of specific tips for learning particular material, participation in activities designed to promote active learning and integration of info, gaining a better idea of my expectations for assignments or exams. With that said, you will be given **up to 3 allowed absences**, and starting with the fourth absence, your participation grade (see below) will be reduced by 10 pts for each additional absence—exceptions may be made in cases of emergency, as determined on a case by case basis. Apart from this policy, there are some days on which attendance is required (e.g., debate days).

**Lateness:** A legitimate reason for being late can happen to anyone now and then, but repeated lateness is disrespectful to me and to your classmates. Come see me if you have a legitimate reason for repeated lateness or absence.

## Course Evaluation:

**1. Participation:** In addition to the attendance policy, you will be graded for your participation each week, particularly on days when we do class or group discussion. An average will be taken across the weeks of the semester to determine your final participation grade. Days when there are class activities, discussions about readings, and other opportunities for participation (e.g., questions/comments when other students presenting) will be weighted more heavily in this average.

- A:** Contributes to class discussion by asking questions or making comments about readings, lectures, or in response to other students. Participates actively in class activities; stays on task. Comes fully prepared. Completes smaller tasks assigned outside of class to promote class discussion.
- C:** Attentive and engaged but no spontaneous contribution to class activities or discussions, or contribution with evidence of poor preparation. Repeated lateness.
- F:** Shows up but disengaged, inattentive, doesn't participate apart from when directly prompted. Disruptive (e.g., table-dancing) or inconsiderate (e.g., snoring loudly, texting or surfing the net during class) behavior.

**2. Exams:** There will be three exams during the course of the semester. The format of the exams will be a combination of multiple choice, diagram identification, short answer, and essay. Exams can include questions on the assigned text chapters, handouts, and readings, even if not discussed in lecture. Study guides will be posted on Blackboard as each exam approaches and will include important terms to know for the exam as well as sample exam questions.

**Missed exams:** If you miss an exam and have a *legitimate, documentable* excuse, you can schedule a makeup exam. If your excuse is due to a reason that could not be foreseen, I expect you to contact me *as soon as possible* after the exam. If you know in advance that you will be absent during an exam (e.g., because of travel for a sports team, medical excuse, interview, etc.) then you need to let me know as soon as possible before the exam. You may not take a make-up exam if you skipped the exam without legitimate reason for absence.

**3. Class Debates:** This project involves individual presentations of empirical evidence that contributes to our understanding of a particular debate, as well as in-class discussion about the debate and the evidence. The actual debate days will be preceded by days in which class-time, involving the whole class, will be devoted to this discussion. However, half of the students will be responsible for finding evidence for the first debate, and half for the second debate. On the debate days, the whole class will work together to evaluate the evidence, but the students assigned to the debate will present their piece of evidence several classes before that.

**4. Converging Evidence Paper:** There will be a paper due mid-term incorporating 6+ primary sources reflecting multiple forms of neuroscience evidence (e.g., electrophysiological techniques, neuroimaging, animal lesion studies, human patient studies, etc.) and exploring a neuropsychological condition. The paper will conclude by proposing an experiment/study employing one particular form of evidence to continue investigating the condition, and giving insight into how different forms of evidence contributed to your proposed study.

**5. Creative Assignment:** This assignment will give you the freedom to select material that interests you and interact with it/incorporated it in a unique way. You will use the text and at least one additional scholarly (experimental) source to complete this assignment. I will give you some examples, but you are encouraged to come up with your own ideas.

**Late Policy:** Late papers will be accepted for up to four days after the due date and will result in a reduction of *1 letter grade* (i.e., 10%) *for every calendar day late* beginning at **5pm** on the day the assignment is due. After the four-day period, the paper will not be accepted and a grade of 0 will be applied. Exceptions to this policy will only be made under truly extenuating circumstances (determined by me on a case-by-case basis).

***I only accept work by email if you have arranged it with me for that particular assignment.***

Note that it is within my purview to use qualitative judgment in assigning grades for various components of the course (e.g., homework assignments, exam essays, papers, etc.).

**Grading breakdown:**

Participation	100
Exams (3 @ ~100 pts each)	300
Debate	150
Converging evidence paper	100
<u>Creative assignment</u>	<u>100</u>
Total	750

Unless otherwise noted, I will use the following scale for calculating grades:

Letter	Percentage	Grade range	Letter	Percentage	Grade range
A	100	95-100	C	75	73-76
A-	92	90-94	C-	71	70-72
B+	88	87-89	D+	68	67-69
B	85	83-86	D	65	63-66
B-	81	80-82	D-	61	60-62
C+	78	77-79	F	0	0-59

**Extra credit:** Extra credit opportunities will be made available partway through the semester. However, do come and see me at any point during the semester if you feel you could be doing better than you are. We can work together to improve your performance.

**Disabilities:** The Americans with Disabilities Act (ADA) provides for some accommodations to be made for students with certain disabilities. If you have such a disability and are willing to disclose it, you may take advantage of such accommodations. Students who wish to request accommodations in this class for a disability should contact Elaine Mara, assistant director of Academic and Disability Support at 1307 Main Street, or by calling 610-861-1510. Accommodations cannot be provided until authorization is received from the Academic Support Center. You should also consider taking advantage of the Academic Support Center if you are having difficulty academically in this (or any other) class.

**Plagiarism and cheating:** Any work that you turn in for this class must be entirely your own work. Any sources used must be properly documented, and ***I ask you not to use any direct quotes in assignments or papers.*** For more information on plagiarism and cheating, refer to the Student Handbook and the following website regarding academic responsibility at Moravian College: <http://www.moravian.edu/studentLife/handbook/academic2.htm>. As this site clearly explains, the consequences for cheating or plagiarism can range from failing the assignment to receiving an F for the final course grade to expulsion, depending on the severity of the case and prior history of offenses. All of the work you submit to me must be entirely your own, and in some cases I may ask you not to collaborate with fellow students. For the group debate project, in which collaboration is an important component, I will discuss how to cite the ideas of others in class appropriately, but you are expected to do the writing independently.

I will spend class time discussing ways to avoid plagiarizing, but apart from this it is your responsibility to come see me if you have any questions about your use of sources or when/in what way it is okay to collaborate with other students in the class.

**Class Schedule** (This schedule is tentative. I reserve the right to make announced changes.):

<b>Week:</b>	<b>Class topic/activities:</b>	<b>Text Chs/Assignments:</b>
<b>1</b>		
Aug 28 T	Course overview	
Aug 30 R	Introduction to the field	Ch. 1
<b>2</b>		
Sept 4 T	Neurons & signal conduction	Ch. 2
Sept 6 R	Neurons & signal conduction cont'd	
<b>3</b>		
Sept 11 T	Neuroscience methodology: Electrophysiological methods	Ch. 3
Sept 13 R	Neuroscience methodology: Imaging methods	Ch. 4
<b>4</b>		
Sept 18 T	Neuroanatomy lab & Methodology: Lesions	Ch. 5 (pp. 81-84 only)
Sept 20 R	Methodology cont'd	
<b>5</b>		
Sept 25 T	<b>Exam 1</b>	
Sept 27 R	Visual perception	Ch. 6
<b>6</b>		
Oct 2 T	Visual perception cont'd	
Oct 4 R	Spatial processing	Ch. 7; <i>Face articles</i>

<b>Week:</b>	<b>Class topic/activities:</b>	<b>Text Chs/Assignments:</b>
<b>7</b>	Oct 9 T <b>Fall Break – No class</b>	
	Oct 11 R Visual perception cont'd	Synesthesia article; <i>Face articles</i>
<b>8</b>	Oct 16 T <b><i>Face module debate</i></b>	
	Oct 18 R Memory	Ch. 9
<b>9</b>	Oct 23 T Memory cont'd	<i>Face debate write-up</i>
	Oct 25 R Amnesia	Amnesia article
<b>10</b>	Oct 30 T Amnesia in Hollywood	
	Nov 1 R <b>Exam 2</b>	
<b>11</b>	Nov 6 T Language	Ch. 11
	Nov 8 R	<i>Creative assignments due</i>
<b>12</b>	Nov 13 T Language cont'd	Ch. 12; <i>Gender articles</i>
	Nov 15 R	Sign language article; <i>Gender articles</i>
<b>13</b>	Nov 20 T <b><i>Gender differences in communication debate</i></b>	
	Nov 22 R <b>NO CLASS – Thanksgiving Break</b>	
<b>14</b>	Nov 27 T Social/Emotion function	Ch. 15
	Nov 29 R	<b><i>Converging evidence paper due</i></b>
<b>15</b>	Dec 4 T Executive function	Ch. 14; Phineas Gage article
	Dec 6 R Share creative assignments	<i>Gender debate write-up</i>
Finals Wk <b>Exam 3</b> Mon. Dec 10 <sup>th</sup> at 8:30am		

Exam 1 – Chs. 1-4 & 5 (pp. 81-84)

Exam 2 – Chs. 6-7, 9 & assigned articles

Exam 3 – Chs. 11-12, 14-15, & assigned articles