

**Psychology 711**  
**Essentials of Cognitive Neuroscience**  
**Fall 2016**

This course is intended to provide a broad overview of principles that underlie our understanding of how the structure and function of the brain give rise to cognition and intelligent behavior, and of the methods with which cognitive neuroscience research is carried out. The content covered can be summarized as *neuroscience with direct implications for understanding the neural bases of human behavior*, and will include anatomical, cellular, systems, behavioral, neuropsychological, and computational levels of analysis. The emphasis will be on domains of behavior traditionally covered by cognitive psychology and neurology, but with explicit consideration, when applicable, of implications for understanding affect, social behavior, and psychopathology.

Just like the book, the course will be organized under the topics of *Sensation, Perception, Attention, and Action; Mental Representation; and High-level Cognition*.

Through out the course, in-depth consideration will be given to the methods of cognitive neuroscience: the assumptions that underlie them; their physical/biological/physiological bases; methods for analyzing the data that they produce; the pragmatics of their use; and the kinds of inference that they can (and cannot) support. This class will equip students with the foundation needed to be savvy and critical consumers of the literature relevant to their own research questions.

For more detailed summary of topics to be covered, see the book's detailed table of contents at: <http://postlab.psych.wisc.edu> → Teaching → Fall 2016 → Psychology 711

Instructor: Brad Postle, 515 Psychology, 262-4330, [postle@wisc.edu](mailto:postle@wisc.edu)  
Office hours by appointment.

*With the exception of time-sensitive emergencies, email is the most effective and preferred way for you to contact me.*

Format: The format will be lecture, with ample opportunity for discussion and exploration of questions that are of specific interest to students in the class. Assigned readings and video viewings will come from Postle, B.R. (2015) *Essentials of Cognitive Neuroscience* (Wiley), with video "Web Clips" hosted on the book's companion Web page. Note that everyone is expected to have read all of each week's assigned reading prior to that week's class.

Grading will be based on class participation (10%), and three section exams (30% each). The exams will be short-answer essay format. Throughout the course, material assigned and presented for a particular week will assume an accumulation of knowledge of all that preceded it. Thus, although the second and third section exams won't test specific material from the first, they will both assume a command of all the material from the preceding section(s). A student's class participation grade will be negatively impacted if the professor has the impression that the student has spent an excessive amount of class time engaged in activities unrelated to class.

*Class meets Tuesdays, from 9:30am - 12 pm, in room 634 Psychology*

*Beta version, 22 April 2015*

**Week 1 (9/06) Introduction and historical foundations; principles of anatomy and physiology**

*Reading:* Chpt. 1 & 2 + associated Web clips

**Week 2 (9/13) Sensation and perception of visual signals**

*Reading:* Chpt. 3 + associated Web clips

**Week 3 (9/20) Sensation and perception of auditory and somatosensory signals; Organization of the visual system**

*Reading:* Chpts. 4 and 5 + associated Web clips

**Week 4 (9/27) Spatial Cognition and Attention**

*Reading:* Chpt. 6 + associated Web clips

**Week 5 (10/04) Skeletomotor Control**

*Reading:* Chpt. 7 + associated Web clips

**Week 6 (10/11) Oculomotor Control and the Control of Attention**

*Reading:* Chpt. 8+ associated Web clips

**Week 7 (10/18) First Hour: Exam 1**

*Remainder of class: Visual object recognition and knowledge*

*Reading:* Chpt. 9 + associated Web clips

**Week 8 (10/25) Neural bases of memory**

*Reading:* Chpt. 10 + associated Web clips

**Week 9 (11/01) Declarative long-term memory**

*Reading:* Chpt. 11 + associated Web clips

**Week 10 (11/08) Semantic long-term memory**

*Reading:* Chpt. 12 + associated Web clips

**Week 11 (11/15) No class – Annual meeting of the Society for Neuroscience**

**Week 12 (11/22) Short-term and working memory**

*Reading:* Chpt. 13 + associated Web clips

**Week 13 (11/29) First Hour: Exam 2**

*Remainder of class: Cognitive control*

*Reading:* Chpt. 14 + associated Web clips

**Week 14 (12/06) Decision making and Social behavior**

*Reading:* Chpts. 15 & 16 + associated Web clips

**Week 15 (12/13) Social behavior, Emotions, Language**

*Reading:* Chpts. 17, 18 + associated Web clips

## University legislation specifies that the following must appear on the syllabus:

### Where to take complaints about a Teaching Assistant or Course Instructor:

Occasionally, a student may have a complaint about a Teaching Assistant or course instructor. If that happens, you should feel free to discuss the matter directly with the TA or instructor. If the complaint is about the TA and you do not feel comfortable discussing it with him or her, you should discuss it with the course instructor. If you do not want to approach the instructor, make an appointment to speak to the Department Chair, Professor Patricia Devine: [chair@psych.wisc.edu](mailto:chair@psych.wisc.edu).

If your complaint has to do with sexual harassment, you may also take your complaint to Vicky Lenzlinger, Instructional Program Manager, [vlenzlinger@psych.wisc.edu](mailto:vlenzlinger@psych.wisc.edu). Her office is located on the second floor of the Psychology building, room 222.

If you believe the TA or course instructor has discriminated against you because of your religion, race, gender, sexual orientation, or ethnic background, you also may take your complaint to the Office of Equity and Diversity, room 179-A Bascom Hall, or go to: <http://www.oed.wisc.edu/>

*(Optional) If your TA is not a native English speaker and you have difficulty understanding his or her speech, ask the TA to repeat sentences that you do not understand. If you have serious or prolonged difficulty understanding, discuss the problem with the course instructor. But remember that this is a multicultural institution and that the diversity of TAs can add substantially to your education. Some patience with unfamiliar accents may reward you with a better understanding of the world.*

### Ethics of being a student in the Department of Psychology

The members of the faculty of the Department of Psychology at UW-Madison uphold the highest ethical standards of teaching and research. They expect their students to uphold the same standards of ethical conduct. By registering for this course, you are implicitly agreeing to conduct yourself with the utmost integrity throughout the semester.

In the Department of Psychology, acts of academic misconduct are taken very seriously. Such acts diminish the educational experience for all involved – students who commit the acts, classmates who would never consider engaging in such behaviors, and instructors. Academic misconduct includes, but is not limited to, cheating on assignments and exams, stealing exams, sabotaging the work of classmates, submitting fraudulent data, plagiarizing the work of classmates or published and/or online sources, acquiring previously written papers and submitting them (altered or unaltered) for course assignments, collaborating with classmates when such collaboration is not authorized, and assisting fellow students in acts of misconduct. Students who have knowledge that classmates have engaged in academic misconduct should report this to the instructor.

For detailed information on how to avoid plagiarism, please see the following website: <http://writing.wisc.edu/Handbook/QuotingSources.html>

Your instructor will contact you if s/he has concerns about academic misconduct. You will have an opportunity to explain your work and address your instructor's concerns. Following the meeting, if your instructor believes that you engaged in misconduct, s/he will decide on an action. Following UW protocol, your instructor will inform the Dean of Students' Office of the outcome of the meeting and proposed sanction. Penalties for substantiated cases of academic misconduct include a zero on the assignment or exam, a lower grade in the course, and failure

*Beta version, 22 April 2015*

in the course. Repeated acts of academic misconduct may result in more serious actions such as probation or suspension. For complete information on proper conduct, academic misconduct, and sanctions, please see UWS Chapter

14: <http://students.wisc.edu/saja/misconduct/UWS14.html>