

Psychology 5360K: Human Memory and Memory Disorders Spring 2015 Syllabus

Instructor:

Dr. Rebecca Deason

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Office Hours: Tues 2-5:15pm, Wed 3:30-5:15pm, or by appointment

Co-Instructor: Dr. Carmen Westerberg (Please note: Dr. Westerberg will be teaching the course when I go on maternity leave later in the semester – approximately April 6th)

Course Objectives:

This course provides a comprehensive overview of topics in human memory including different types of memory and brain structures involved. Special emphasis will be given to problems with memory including forgetting, aging memory, amnesia, and Alzheimer's disease. This seminar course will cover both current theories and cutting-edge research.

Learning Outcomes:

After completing this course, students will have mastery of:

- Understanding of current theories in human memory
- Understanding of methods used to study human memory
- Familiarity with the anatomy and physiology of biological processes that give rise to memory
- Familiarity with different presentations of memory disorders including amnesia and Alzheimer's disease
- Ability to critically evaluate current research findings in human memory.

Required Textbook: Baddeley, A., Eysenck, M. W., Anderson, M. C. (2014). *Memory, 2nd edition*. New York, NY: Psychology Press. Other assigned readings for each class are listed on the course schedule/article discussion list and will be posted on TRACS.

Grading: Final grades will be based on midterm exam scores, class presentations/participation, and a written research proposal.

<u>Item</u>	<u>% of final grade</u>
Three Midterm Exams	30%
Discussion Questions/Class Participation	10%
Article Presentations	15%
Proposal Presentation	15%
Final Research Proposal Paper	30%

The following grading scale will be used:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	F

Midterm exams: Three essay exams will be given during the semester. Missing an exam day is strongly discouraged. There will be no make-up exams without proper documentation of a reasonable excuse, and the “reasonability” of the excuse is at the sole discretion of the instructor.

Discussion Questions/Class Participation: Attendance during each class period is strongly encouraged. At the beginning of each discussion class session, each student will turn in a hard copy (can be printed or handwritten) of two questions they have generated based on the day’s assigned articles. These questions will help facilitate our discussion and will factor into participation grades.

Article Presentations: During the second class period, each student will sign up to lead the discussion on a given article discussion day. The student in charge of leading the discussion will have read each article in depth and have prepared a powerpoint presentation that includes relevant figures from the articles to aid discussion.

Presentation of Research Proposal: During the last two class periods, each student will give a 15-minute (plus about 10 minutes for discussion/questions/feedback) powerpoint presentation detailing their final research proposal.

Final Research Proposal: One 5-8 page written research report is required. Instructions for the research report will be distributed separately during class later in the semester.

Attendance Policy:

Attendance is not required but is strongly encouraged. Lectures will include material not covered in the textbook, and exams will test material from both the lectures and the textbook. Discussion points are also awarded on designated days. Failure to attend a discussion day will result in a loss of points for the day.

Academic Honesty/Honor Code:

The following information is directly quoted from the policy statement of the Texas State University System (<http://www.txstate.edu/effective/upps/upps-07-10-01.html>).

As members of a community dedicated to learning, inquiry, and creation, the students, faculty, and administration of our University live by the principles in this Honor Code. These principles require all members of this community to be conscientious, respectful, and honest.

We Are Conscientious: We complete our work on time and make every effort to do it right. We come to class and meetings prepared and are willing to demonstrate it. We hold ourselves to doing what is required, embrace rigor, and shun mediocrity special requests, and excuses.

We Are Respectful: We act civilly toward one another, and we cooperate with each other. We will strive to create an environment in which people respect and listen to one another, speaking when appropriate, and permitting other people to participate and express their views.

We Are Honest: We do our own work and are honest with one another in all matters. We understand how various acts of dishonesty, like plagiarizing, falsifying data, and giving or receiving assistance to which one is not entitled, conflict as much with academic achievement as with the values of honesty and integrity.

Instances of cheating or plagiarism will be addressed in the following manner: (a) an initial violation will result in a conference and a grade of “zero” for that exam or assignment, and (b) any subsequent offense will result in a course grade of “F,” and the matter may be referred to the Dean of Students.

Students with Special Needs

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact me as soon as possible. Adaptations of methods, materials, or testing may be made as required to provide for equitable participation. You will be asked to provide documentation from the Office of Disability Services. Failure to contact me in a timely manner may delay your accommodations

(<http://uweb.txstate.edu/academicaffairs/pps/PPS4/4-01.doc>).

Psychology 5360K - Spring 2015 Course Schedule

Date	Topic	Assigned Reading
January 21	Introduction/Memory Structure	Chapter 1
January 26	Memory and the Brain	Chapter 2
January 28	Working Memory/Short-Term Memory	Chapter 3, 4
February 2	WM/STM Article Discussion	See article list
February 4	Types of Memory I	Chapter 6, 7, 8
February 9	Types of Memory II	Chapter 6, 7, 8
February 11	Types of Memory Article Discussion	See article list
February 16	MIDTERM	
February 18	Forgetting and False Memory	Chapter 9, 10
February 23	Forgetting and False Memory	Chapter 9, 10
February 25	Forgetting and False Memory Article Discussion	See article list
March 2	Memory and Aging	Chapter 15
March 4	Memory and Aging Article Discussion	See article list
March 9	When Memory Systems Fail	Chapter 16
March 11	When Memory Systems Fail	Chapter 16
March 16	SPRING BREAK	
March 18	SPRING BREAK	
March 23	When Memory Systems Fail Article Discussion	See article list
March 25	MIDTERM	
March 30	Alzheimer's Disease	Chapter 16
April 1	Alzheimer's Disease Article Discussion	See article list
April 6	Improving Memory	Chapter 17
April 8	Improving Memory Article Discussion	See article list
April 13	Consolidation/Sleep	
April 15	Consolidation/Sleep Article Discussion	See article list
April 20	Emotion and Memory	
April 22	Emotion and Memory Discussion	See article list
April 27	MIDTERM	
April 29	Proposals	
May 4	Proposals	

Final Research Proposal Due – Wednesday, May 6 at 10:30am (at end of scheduled final exam time)

Article Discussion List

Short-term Memory/Working Memory

- Levinson, D. B., Smallwood, J., & Davidson, R. J. (2012). The Persistence of Thought: Evidence for a Role of Working Memory in the Maintenance of Task-Unrelated Thinking. *Psychological Science : a Journal of the American Psychological Society / APS*, 23(4), 375–380.
- Olesen, P. J., Westerberg, H., & Klingberg, T. (2003). Increased prefrontal and parietal activity after training of working memory. *Nature Neuroscience*, 7(1), 75–79.
- Holmes, J., Gathercole, S. E., & Dunning, D. L. (2009). Adaptive training leads to sustained enhancement of poor working memory in children. *Developmental Science*, 12(4), F9–F15.

Types of Memory

- Maguire, E. A., Woollett, K., & Spiers, H. J. (2006). London taxi drivers and bus drivers: A structural MRI and neuropsychological analysis. *Hippocampus*, 16(12), 1091–1101.
- Voss, J. L., Lucas, H. D., & Paller, K. A. (2010). Conceptual priming and familiarity: Different expressions of memory during recognition testing with distinct neurophysiological correlates. *Journal of Cognitive Neuroscience*, 22(11), 2638–2651.

Forgetting and False Memory

- Chan, J. K., Thomas, A. & Bulevich, J. B. (2009). Recalling a witnessed event increases eyewitness suggestibility: The reversed testing effect. *Psychological Science*, 20, 66–73.
- Patihis, L., Frenda, S. J., LePort, A. K., Petersen, N., Nichols, R. M., Stark, C. E., McGaugh, J., & Loftus, E. (2013). False memories in highly superior autobiographical memory individuals. *Proceedings of the National Academy of Sciences of the United States of America*, 110(52), 20947–20952.

Memory and Aging

- St Jacques, P. L., Montgomery, D., & Schacter, D. L. (2014). Modifying memory for a museum tour in older adults: Reactivation-related updating that enhances and distorts memory is reduced in ageing. *Memory (Hove, England)*, 1–12.
- St-Laurent, M., Abdi, H., Burianova, H., & Grady, C. L. (2011). Influence of Aging on the Neural Correlates of Autobiographical, Episodic, and Semantic Memory Retrieval. *Journal of Cognitive Neuroscience*, 23(12), 4150–4163.

When Memory Systems Fail

- Kan, I. P., Alexander, M. P., & Verfaellie, M. (2009). Contribution of Prior Semantic Knowledge to New Episodic Learning in Amnesia. *Journal of Cognitive Neuroscience*, 21(5), 938–944.
- Stark, S., Gordon, B., & Stark, C. E. (2008). A case study of amnesia: Exploring a paradigm for new semantic learning and generalization. *Brain Injury*, 22, 283–292.
- Saxendale, S. (2004). Memories aren't made of this: Amnesia at the movies. *British*

Medical Journal, 329, 1480-1483.

Alzheimer's disease

- Simmons-Stern, N. R., Budson, A. E., & Ally, B. A. (2010). Music as a memory enhancer in patients with Alzheimer's disease. *Neuropsychologia*, 48(10), 3164-3167.
- Budson, A. E., Simons, J. S., Waring, J. D., Sullivan, A. L., Hussoin, T., & Schacter, D. L. (2007). Memory for the September 11, 2001 terrorist attacks one year later in patients with Alzheimer's disease, patients with mild cognitive impairment, and healthy older adults. *Cortex*, 43, 785-888.

Improving memory

- Mueller, P. A., & Oppenheimer, D. M. (2014). The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. *Psychological Science*, 25, 1159-1168.
- Lampit, A., Hallock, H., & Valenzuela, M. (2014). Computerized Cognitive Training in Cognitively Healthy Older Adults: A Systematic Review and Meta-Analysis of Effect Modifiers. *PLoS Medicine*, 11(11),

Consolidation and Sleep

- Wilson, J. K., Baran, B., Pace-Schott, E. F., Ivry, R. B., Spencer, R. M. C. (2012). Sleep modulates word-pair learning but not motor sequence learning in healthy older adults. *Neurobiology of Aging*, 33, 991-1000.
- Stickgold, R., & Walker, M. P. (2013). Sleep-dependent memory triage: evolving generalization through selective processing. *Nature Neuroscience*, 16(2), 139-145.

Emotion and Memory

- Payne, J. D., & Kensinger, E. A. (2010). Sleep's role in the consolidation of emotional episodic memories. *Psychological Science*, 19(5), 290-295.
- Steinmetz, K. R. M., & Kensinger, E. A. (2013). The emotion induced memory trade-off: More than an effect of overt attention? *Memory & Cognition*, 41, 69-81.