**Psychology 5360K: Human Memory and Memory Disorders**

**Spring 2016 Syllabus**

**Instructor:**

Dr. Rebecca Deason

Office Location: UAC 242

Email: [rgd28@txstate.edu](mailto:rgd28@txstate.edu)

Office Phone: 512-245-6796

**Office Hours:** Tuesday 2-4:30pm, Thursday 2-4:30pm, or by appointment

**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.

Item % of final grade

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 for slots to take the lead on discussion of an article. The student in charge of leading the discussion will have read the article in depth, be prepared to walk the class through it, and be prepared to relate it to the larger memory topic. We will talk more about what is expected in these presentations in class.

*Presentation of Research Proposal:* During the last three 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 20 | Introduction/Memory Structure | Chapter 1 |
| January 25 | Memory and the Brain | Chapter 2 |
| January 27 | Working Memory/Short-Term Memory | Chapter 3, 4 |
| February 1 | WM/STM Article Discussion | See article list |
| February 3 | Learning/Consolidation | Chapter 5 |
| February 8 | Learning/Consolidation Article Discussion | See article list |
| February 10 | **MIDTERM** |  |
| February 15 | Types of Memory I | Chapter 6 |
| February 17 | Types of Memory II | Chapter 7 |
| February 22 | Types of Memory Article Discussion | See article list |
| February 24 | Memory Retrieval | Chapter 8 |
| February 29 | Memory Retrieval Article Discussion | See article list |
| March 2 | Forgetting and False Memory | Chapter 9,10 |
| March 7 | Forgetting and False Memory | Chapter 9,10 |
| March 9 | Forgetting and False Memory Article Discussion | See article list |
| March 14 | SPRING BREAK |  |
| March 16 | SPRING BREAK |  |
| March 21 | Individual Proposal Meetings |  |
| March 23 | **MIDTERM** |  |
| March 28 | When Memory Systems Fail | Chapter 16 |
| March 30 | When Memory Systems Fail Article Discussion | See article list |
| April 4 | Memory across the lifespan | Chapter 14, 15 |
| April 6 | Alzheimer’s Disease | Chapter 15 |
| April 11 | Alzheimer’s Disease Article Discussion | See article list |
| April 13 | Other Memory Topics |  |
| April 18 | Other Memory Topics Article Discussion | TBD |
| April 20 | **MIDTERM** |  |
| April 25 | Proposals |  |
| April 27 | Proposals |  |
| May 2 | Proposals |  |

**Final Research Proposal Due – Wednesday, May 4 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.

**Learning/Consolidation**

* Soderstrom, N. C., Kerr, T. K., & Bjork, R. A. (in press). The critical importance of retrieval-and spacing-for learning. *Psychological Science,* online, 1-8.
* 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.

**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.
* McLelland, V. C., Devitt, A. L., Schacter, D. L., Addis, D. R. (2014). Making the future memorable: the phenomenology of remembered future events. *Memory, 23*, 1255-1263.
* Spalding, K. N., Jones, S. H., Duff, M. C., Tranel, D., & Warren, D. E. (2015). Investigating the neural correlates of schemas: Ventromedial prefrontal cortex is necessary for normal schematic influence on memory. *The Journal of Neuroscience, 35*, 15746-15751.

**Memory Retrieval**

* Brainerd, C. J., Gomes, C. F. A., & Nakamura, K. (2015). Dual recollection in episodic memory. *Journal of Experimental Psychology: General, 144*, 816-843.
* 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.
* Fukuda, K., & Woodman, G. F. (2015). Predicting and improving recognition memory using multiple electrophysiological signals in real time. *Psychological Science, 26*, 1026-1037.

**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.
* Catarino, A., Kupper, C. S., Werner-Seidler, A., Dalgleish, T., & Anderson, M. C. (2015). Failing to forget: Inhibitory-control deficits compromise memory suppression in posttraumatic stress disorder. *Psychological Science, 26*, 604-616.
* St. Jacques, P. L. S., Olm, C., & Schacter, D. L. (2013). Neural mechanisms of reactivation-induced updating that enhance and distort memory. *PNAS, 110*, 19671-19678.

**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.
* Baxendale, S. (2004). Memories aren’t made of this: Amnesia at the movies. *British Medical Journal, 329*, 1480-1483.
* Annese, J. et al. (2014). Postmortem examination of patient H.M.’s brain based on histological sectioning and digital 3D reconstruction. *Nature Communications, 5*, 1-8.

**Alzheimer’s disease/Aging**

* 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.
* Monti, J. M., Balota, D. A., Warren, D. E., Cohen, N. J. (2014). Very mild Alzheimer’s disease is characterized by increased sensitivity to mnemonic interference. *Neuropsychologia, 59*, 47-56.
* 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.

**Other Memory Topics**

* TBD