Schedule of Readings:

Some of the readings are mandatory, as indicated by the asterisk (*) beside the reference; others are optional/supplemental. The reading list will be modified throughout the term, and additional readings may be added on occasion. See course Moodle site for most up-to-date list of readings for each class.

Sept. 14 **Course Overview**
No Readings

Sept. 21 **Topic 1: Approaches & Methods in Memory & Cognition Research**

*Cabeza, R., & Moscovitch, M. (2013). Memory Systems, Processing Modes, and Components: Functional Neuroimaging Evidence. *Perspectives in Psychological Science, 8,* 49-55.

*McIntosh, A. R. (2004). Contexts and catalysts: a resolution of the localization and integration of function in the brain. *Neuroinformatics, 2*(2), 175-182.

EITHER *Rosenbaum, R.S., Köhler, S., Schacter, D. L., Moscovitch, M., Westmacott, R., Black, S.E., Gao, F., & Tulving, E. (2005). The case of K.C.: Contributions of a memory- impaired person to memory theory. *Neuropsychologia, 43,* 989-1021.

OR *Moscovitch, M., Winocur, G., & Behrmann, M. (1997). What Is Special about Face Recognition? Nineteen Experiments on a Person with Visual Object Agnosia and Dyslexia but Normal Face Recognition. *J Cogn Neurosci, 9*(5), 555-604.

Davis, T., & Poldrack, R.A. (2013). Measuring neural representations with fMRI: practices and pitfalls. *Annals of the New York Academy of Sciences, 1296,* 108-134.

Holdstock JS, Parslow DM, Morris RG, Fleminger S, Abrahams S, Denby C, Montaldi D, Mayes AR. (2008). Two case studies illustrating how relatively selective hippocampal lesions in humans can have quite different effects on memory. *Hippocampus, 18,* 679-91.

Sept. 28 **Topic 2: Object Concepts & Semantic Memory**

*Martin, A. (2007). The representation of object concepts in the brain. *Annual Review of Psychology, 58,* 25-45.

*Patterson, K., Nestor, P. J., & Rogers, T. T. (2007). Where do you know what you know? The representation of semantic knowledge in the human brain. *Nat Rev Neurosci, 8*(12), 976-987.

*Martin, A., Simmons, W. K., Beauchamp, M. S., & Gotts, S. J. (2014). Is a single 'hub', with lots of spokes, an accurate description of the neural architecture of action semantics?: Comment on "Action semantics: A unifying conceptual framework for the selective use of multimodal and modality-specific object knowledge" by van Elk, van Schie and Bekkering. *Phys Life Rev*.

Simmons, W. K., & Martin, A. (2009). The anterior temporal lobes and the functional architecture of semantic memory. *J Int Neuropsychol Soc, 15*(5), 645-649.

Simmons, W. K., Reddish, M., Bellgowan, P. S., & Martin, A. (2010). The selectivity and functional connectivity of the anterior temporal lobes. *Cereb Cortex, 20*(4), 813-825.

Oct. 5 **Topic 3: Neurocognitive Specialization & Plasticity**

*Stevens, W. D., & Spreng, R. N. (2014). Resting-state functional connectivity MRI reveals active processes central to cognition. *Wiley Interdisciplinary Reviews-Cognitive Science, 5, 233-245.*

*Dehaene, S., & Cohen, L. (2011). The unique role of the visual word form area in reading. *Trends Cogn Sci, 15*(6), 254-262.

*Glezer, L. S., Jiang, X., & Riesenhuber, M. (2009). Evidence for highly selective neuronal tuning to whole words in the "visual word form area". *Neuron, 62*(2), 199-204.

*Vogel, A. C., Petersen, S. E., & Schlaggar, B. L. (2014). The VWFA: it's not just for words anymore. *Front Hum Neurosci, 8*, Article 88, 1-10.

Glezer, L. S., & Riesenhuber, M. (2013). Individual variability in location impacts orthographic selectivity in the "visual word form area". *J Neurosci, 33*(27), 11221-11226.

Behrmann, M., & Plaut, D. C. (2013). Distributed circuits, not circumscribed centers, mediate visual recognition. *Trends Cogn Sci, 17*(5), 210-219.

Oct. 19 **Topic 4: Implicit Memory**

*Schacter, D. L. (1987). Implicit memory: History and current status. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 13,* 501-518.

*Hamann, S. B., & Squire, L. R. (1997). Intact perceptual memory in the absence of conscious memory. *Behav Neurosci, 111*(4), 850-854.

*Schacter, D. L., & Buckner, R. L. (1998). Priming and the brain. *Neuron, 20*(2), 185-195.

Schott, B. H., Richardson-Klavehn, A., Henson, R. N., Becker, C., Heinze, H. J., & Duzel, E. (2006). Neuroanatomical dissociation of encoding processes related to priming and explicit memory. *J Neurosci, 26*(3), 792-800.

Schott, B. H., Henson, R. N., Richardson-Klavehn, A., Becker, C., Thoma, V., Heinze, H. J., & Duzel, E. (2005). Redefining implicit and explicit memory: the functional neuroanatomy of priming, remembering, and control of retrieval. *Proc Natl Adac Sci USA, 102*, 1257-1262.

Turk-Browne, N. B., Yi, D. J., & Chun, M. M. (2006). Linking implicit and explicit memory: common encoding factors and shared representations. *Neuron, 49*(6), 917-927.

Oct. 26 **Topic 5: Priming & Repetition Suppression**

*Grill-Spector, K., Henson, R., & Martin, A. (2006). Repetition and the brain: neural models of stimulus-specific effects. *Trends Cogn Sci, 10*(1), 14-23.

*Stevens, W. D., Wig, G. S., & Schacter, D. L. (2008). Implicit memory and priming. In J.H. Byrne et al. (Ed.) *Learning and memory: A comprehensive reference* (pp. 623-644). Oxford: Elsevier.

*Dobbins, I. G., Schnyer, D. M., Verfaellie, M., & Schacter, D. L. (2004). Cortical activity reductions during repetition priming can result from rapid response learning. *Nature, 428*(6980), 316-319.

Wig, G. S., Grafton, S. T., Demos, K. E., & Kelley, W. M. (2005). Reductions in neural activity underlie behavioral components of repetition priming. *Nat Neurosci, 8*(9), 1228-1233.

Koutstaal, W., Wagner, A. D., Rotte, M., Maril, A., Buckner, R. L., & Schacter, D. L. (2001). Perceptual specificity in visual object priming: functional magnetic resonance imaging evidence for a laterality difference in fusiform cortex. *Neuropsychologia, 39*(2), 184-199.

Nov. 2 **Topic 6: Memory Encoding & Perception**

*Craik, F.I. (2002). Levels of processing: past, present, and future? *Memory, 10, 305-318.*

*Wagner, A. D. et al. (1998). Building memories: remembering and forgetting of verbal experiences as predicted by brain activity. *Science, 281,* 1188-1191.

*Graham, K. S., Barense, M. D., & Lee, A. C. (2010). Going beyond LTM in the MTL: a synthesis of neuropsychological and neuroimaging findings on the role of the medial temporal lobe in memory and perception. *Neuropsychologia, 48*(4), 831-853.

*Knutson, A.R., Hopkins, R.O., & Squire, L.R. (2012). Visual discrimination performance, memory, and medial temporal lobe function. *Proc Natl Acad Sci U S A, 109,* 13106-13111.

Erez J, Lee AC, & Barense MD. (2013). It does not look odd to me: perceptual impairments and eye movements in amnesic patients with medial temporal lobe damage. *Neuropsychologia, 51,* 168-180.

Nov. 9 **Topic 7: Memory Retrieval & Distortions**

*Eichenbaum, H., Yonelinas, A. P., & Ranganath, C. (2007). The medial temporal lobe and recognition memory. *Annual Review of Neuroscience, 30,* 123–152.

*Schacter, D. L. (1999). The seven sins of memory. Insights from psychology and

cognitive neuroscience. *Am Psychol, 54*(3), 182-203.

*Gilboa, A. & Verfaellie, M. (2010). Introduction – Telling it like it isn't: The cognitive neuroscience of confabulation. *Journal of the International Neuropsychological Society, 16,* 961-966.

Eldridge, L.L. et al. (2000). Remembering episodes: a selective role for the hippocampus during retrieval. *Nature Neuroscience, 3,* 1149-1152.

Bowles, B., Crupi, C., Mirsattari, S.M., Pigott, S.E., Parrent, A.G., Pruessner, J.C., Yonelinas, A.P. & Kohler, S. (2007). Impaired familiarity with preserved recollection after anterior temporal-lobe resection that spares the hippocampus. *Proceedings of the National Academy of Sciences, USA,* 16382-16387.

Schacter, D. L., Guerin, S. A. & St. Jacques, P. L. (2011). Memory distortion: an adaptive perspective. *Trends in Cognitive Science, 15,* 467 – 474.

Nov. 16 **<u>Topic 8: Time & Space: Prospection & Spatial Cognition</u>**

*Schacter, D. L., Addis, D. R., Hassabis, D., Martin, V. C., Spreng, R. N., & Szpunar, K. K. (2012). The future of memory: remembering, imagining, and the brain. *Neuron, 76*(4), 677-694.

*Hassabis, D., Kumaran, D., Vann, S. D., & Maguire, E. A. (2007). Patients with hippocampal amnesia cannot imagine new experiences. *Proc Natl Acad Sci U S A, 104*(5), 1726-1731.

*Epstein, R. A., & Vass, L. K. (2014). Neural systems for landmark-based wayfinding in humans. *Philos Trans R Soc Lond B Biol Sci, 369*(1635), 20120533.

Spreng, R. N., Stevens, W. D., Chamberlain, J. P., Gilmore, A. W., & Schacter, D. L. (2010). Default network activity, coupled with the frontoparietal control network, supports goal-directed cognition. *Neuroimage, 53*(1), 303-317.

Aminoff, E. M., Kveraga, K., & Bar, M. (2013). The role of the parahippocampal cortex in cognition. *Trends Cogn Sci, 17*(8), 379-390.

Nov. 23 **<u>Topic 9: Cognitive Control & Working Memory</u>**

*Baddeley, A. (2012). Working memory: theories, models, and controversies. *Annu Rev Psychol, 63*, 1-29.

*Jonides, J., Lewis, R. L., Nee, D. E., Lustig, C. A., Berman, M. G., & Moore, K. S. (2008). The mind and brain of short-term memory. *Annual Review of Psychology, 59,* 193-224.

Champod, A. S., & Petrides, M. (2010). Dissociation within the frontoparietal network in verbal working memory: a parametric functional magnetic resonance imaging study. *J Neurosci, 30*(10), 3849-3856.

Race, E., LaRocque, K. F., Keane, M. M., & Verfaellie, M. (2013). Medial temporal lobe contributions to short-term memory for faces. *J Exp Psychol Gen, 142*(4), 1309-1322.

Dec. 7 **Topic 10: Neurocognitive Aging (Term Paper Due)**

*Buckner, R. L., Head, D., & Lustig, C. (2006). Brain changes in aging: a lifespan perspective. In Bialystok, E., & Craik, F.I.M. (Eds.), *Lifespan cognition: Mechanisms of change.* New York: Oxford University Press.

*Turner, G. R., & D'Esposito, M. (2010). Functinoal Neuroimaging in Aging. In Albert, M. L., & Knoefel, J. E. (Eds.), Clinical neurology of aging, third edition. New York: Oxford University Press.

*Park, D. C., & Reuter-Lorenz, P. (2009). The adaptive brain: aging and neurocognitive scaffolding. Annu Rev Psychol, 60, 173-196.

Taylor, M. J. (2006). Neural Bases of Cognitive Development. In Bialystok, E., & Craik, F.I.M. (Eds.), *Lifespan cognition: Mechanisms of change.* New York: Oxford University Press.

Stevens, W. D., Hasher, L., Chiew, K. S., & Grady, C. L. (2008). A neural mechanism underlying memory failure in older adults. *J Neurosci, 28*(48), 12820-12824.

RECOMMENDED TEXTS and RESOURCES (OPTIONAL)

Cognitive Neuroscience:
Banich, M. T., & Compton, R. J. (2011). Cognitive Neuroscience, 3rd edition. Wadsworth, Cengage Learning.

Eichenbaum, H. (2011). The Cognitive Neuroscience of Memory: An Introduction, 2nd edition. New York: Oxford University Press.

Gazzaniga, M.S. (2014). The Cognitive Neurosciences, 4th edition. Cambridge, MA: MIT Press.

Neuroimaging
Poldrack, R. A., Mumford, J. A., & Nichols, T. E. (2011). Handbook of Functional MRI Data Analysis. New York, NY: Cambridge University Press.

Huettel, S.A., Song, A.W., & McCarthy, G. (2014). Functional Magnetic Resonance Imaging, 3rd edition. Sunderland, MA: Sinauer.

General Guides to Writing and Presentation
Burchfield, R.W. (2004). Fowler's Modern English Usage.

Kosslyn, S.M. (2007). Clear and to the Point: 8 Psychological Principles for Compelling PowerPoint Presentations. New York, NY: Oxford University Press.

ONLINE RESOURCES

The Brain from Top to Bottom: http://thebrain.mcgill.ca/flash/index_d.html (Author: Canadian Institute of Health Research): Material is presented for three type of learners (beginner, intermediate, advance) and topics are organized in five levels (social, psychological, neurological, cellular, molecular). This is an excellent website.

Dana Foundation Brain Web: http://www.dana.org/default.aspx (Author: Dana Foundation): provides information and links to validated sites about brain diseases and disorders, as well as webcasts & podcasts.