

**Psychology 371*:
Research Problems in Behavioral Neuroscience
Fall Term 2012**

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Office hours: Tue. 10:00-11:00 am (or by appointment)

Teaching Assistants/

Lab Instructors: Amy Chee
Chloé Soutar

Lectures: Time: Tuesday, 8:30-10:00 am
Friday, 10:00-11:30 am
Room: Biosciences Complex 2111

Labs: Time: Lab A: Tuesday, 11:30-2:30 pm
Lab B: Wednesday, 11:30-2:30 pm
Room: Craine 420

Text: The required readings for the course consist of review articles and book chapters selected to complement the topics covered in the lectures and seminars. They are available on the Psyc 371 Moodle site.

Assessments:	NeuroTopic presentation:	15%
	Labs (3):	45%
	Participation:	10%
	Final exam:	30%

NeuroTopic presentation: One ~20 min seminar presentation summarizing the introduction, methods, results, and conclusions of an experimental paper assigned by the instructor. Included in this presentation is a brief (1 page in enough!, point form acceptable) summary of the paper presented. This summary will be distributed to all students in the course and forms part of the course reading material.

Labs: Three lab assignments (atlas of the rat brain, one APA-style laboratory report, one conference-style poster presentation). Your lab instructor will provide more detail.

Final exam: The exam consists of short-answer and essay-type questions. Material from lectures, NeuroTopic presentations, and the required readings will be examined.

Participation: Active contributions to discussions during lectures and NeuroTopic presentations.

SCHEDULE OF TOPICS

Date	Topic	Readings
SECTION I: THE RODENT BRAIN		
Sept 11	Course introduction	
Sept 14	Rats as a model to study brain & behavior	Kolb & Tees 1990
Sept 18	Structure and function of the rodent neocortex	
Sept 21	No class	
Sept 25	Animal use in research and teaching	handouts provided
Sept 28	No class	
Oct 2	Models of cortical dysfunction and disease	TBA
Oct 5	Research Methods for behavioral neuroscience	
SECTION II: MEMORY AND PLASTICITY		
Oct 9	Neurobiology of navigation and spatial memory	Lee et al. 1998
Oct 12	Tools in memory research: The Morris water maze	Cain & Saucier 1996
Oct 16	NeuroTopic #1: Neocortex (presentations)...	
Oct 19	...presentations continued	
Oct 23	Synaptic mechanisms of learning and memory	Bear 2003
Oct 26	The dynamic memory trace	
Oct 30	Human Brain Plasticity I: Skill acquisition	Münste et al. 2002
Nov 2	Rhythms of the brain	Buzsaki
Nov 6	NeuroTopic #2: Memory (presentations)	
Nov 9	...presentations continued	
Nov 13		
SECTION III: COMPLEX PROCESSES		
Nov 16	Sleep and Consciousness I: Neurobiology	Hobson 2005
Nov 20	Sleep and Consciousness II: Sleep functions	Frank & Benington 2006
Nov 23	The question of "consciousness"	Vanderwolf 1998
Nov 27	NeuroTopic #3: Sleep (presentations)	
Nov 30	...presentations continued	
Dec 4	In-class poster conference	

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Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see www.academicintegrity.org). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities <http://www.queensu.ca/secretariat/policies/senateandtrustees/principlespriorities.html>).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1 <http://www.queensu.ca/artsci/academic-calendars/2011-2012-calendar/academic-regulations/regulation-1>), on the Arts and Science website (see <http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity>), and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

Web-based academic resources: <http://queensasus.com/>

Academic integrity regulations:
<http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity/instructors>

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