

**Psych 119-Q Syllabus**  
**NEUROPSYCHOLOGY OF SLEEP AND DREAMS**

Winter, 2012 Fri. 9:00-11:50 Franz Hall 3534  
Instructor: Dennis McGinty, Ph.D. Email: dmcginty@ucla.edu

**Week:**

1. Jan 13 **What is the nature of sleep?**  
Definition of sleep.  
Use of the EEG and other methods for quantifying sleep.  
NREM and REM sleep  
Sleep architecture, patterns across the day and night.  
Circadian and ultradian rhythms.  
Autonomic changes during sleep.  
Tools for assessing sleep.
  
2. Jan 20 **Circadian rhythms and sleep.**  
Free-running rhythms and zeitgebers.  
The phase-response curve.  
Circadian aspects of sleep in humans and animals.  
Forced desynchronization and internal desynchronization.  
Hormonal secretory patterns.  
The mammalian circadian clock, the suprachiasmatic nucleus.  
Clock genes.
  
3. Jan 27 **Comparison of sleep among species and across age. (quiz today)**  
Sleep amounts among mammalian species.  
Sleep in non-mammalian species.  
Sleep deprivation in insects.  
Sleep in infants. Sleep and SIDS.  
Sleep in children.  
Sleep in aging.
  
4. Feb 3  
and  
5. Feb 10 **The neural control of sleep.**  
Methods for studying brain and behavior.  
REM sleep: Brainstem and hypothalamic control.  
The role of biogenic amines.  
Mechanisms underlying the EEG.  
Hypothalamic processes and NREM sleep.  
Sleep and thermoregulation.  
Sleep and the immune system.
  
6. Feb 17 **Sleep deprivation and the functions of sleep. (quiz today)**  
Rebound after sleep deprivation; concept of homeostatic control.  
Effects of long term sleep deprivation in animals.  
Deficits after sleep deprivation in humans.  
Is sleep essential?
  
7. Feb 24 **Sleep disorders.**  
What is the abnormal sleepiness?  
Disorders of excessive sleepiness: narcolepsy.  
Disorders of sleepiness: sleep-related breathing disorders.  
Control of breathing during sleep.  
Events during sleep: nightmares, sleep-walking, sleep violence, etc.  
Sleep and aging. Sleep in Alzheimer's Disease.

Human insomnia. Diagnosis and treatment.

8. March 2 **Sleep and psychopathology**

Sleep and depression. Sleep abnormalities.  
Bipolar affective disorder.  
Models of sleep and depression.  
Post traumatic stress disorder

9. Mar 9 **Dreaming. (quiz today)**

10. Mar 16. **Brief presentations. Review.**

**Reading assignments:** Many readings will be available on CCLE.

**Course requirements and grading:**

1. Short quizzes: Weeks 3, 6, 9.
2. Prepare 1-2 page **summaries** of 4 **journal articles**. The first one will be due Feb 10. The remaining three are due week 10, March 16. Only summaries of **journal articles published in the last 8 years (2004 or after)** are acceptable. Do not summarize reviews, case reports, abstracts, or theoretical papers. Generally, a journal article reports new data. To be certain of the suitability of your choices, I recommend that you submit your titles ahead of time. To achieve depth of understanding, I recommend that you do all of your summaries on a single topic, but this is not essential.

**Summaries Format** (see below).

You may do your summaries on any topic. I would be happy to make suggestions. Here are some possible topics, but there are many other possibilities.

Sleep and depression or PTSD.  
Sleep deprivation and human performance or animal learning/memory.  
Sleep in *drosophila*, cetaceans, or another particular genus.  
Sleep and SIDS.  
Insomnia.  
Obstructive sleep apnea.  
Effects of caffeine, other drugs.  
Parasomnias: sleepwalking, restless legs, bedwetting, etc.  
Role of specific neurotransmitters/neuromodulators: 5HT, orexin, histamine, etc.  
Sleep and adult neurogenesis.  
Circadian clock genes and sleep.  
Naps.

3. Brief Presentations. Show one data figure and state why you think it is interesting.

<b>Grades:</b>	<b>Maximum points:</b>	<b>Grades:</b>
Quizzes:	3 X 16 = 48	90-100: A-, A, A+
Summaries:	4 X 12 = 48	80-89: B-, B, B+
Brief Presentation:	4	70-79: C-, C, C+
Total:	<u>100</u>	

**Note:** Within the A, B, or C ranges, there is no specific cutoff for A+ vs. A vs. A- or B+ vs. B vs. B-.

**Missed quizzes.** If you miss a quiz, you may make this up by doing an extra summary (worth a maximum of 16 points).

**Extra credit:** During the quarter, we may offer one or more opportunities for extra credit.

### **Journal article summaries: Format**

1. **Title, Authors, Full bibliographic reference.**
2. **Purpose:** Brief statement of the primary purpose or hypothesis. If the study addresses a controversy that is need of resolution, state the controversy. Sometimes, the purpose can be stated in the form of a hypothesis, and this should be described.
3. **Methods:** State the main elements of the methods. Usually the subject population and the measurements obtained need to be described. Mention statistical methods if these are a crucial part of the methodology of the experiment (e.g., "Multiple regression analysis was used to separate the contribution of age vs. other factors to the dependent variable.")
4. **Results:** Summarize the main quantitative findings in the context of the problem or hypothesis addressed. **Give an indication of the magnitude of any results obtained.** It is important to know if a treatment changed a measurement by 80% rather than 8% even if both were "significant". In other words, do not only give a P value. What was the size of the effect?
5. **Discussion:** Imagine that you are writing a very short version of the Discussion of the paper. State **a)** main result (was the hypothesis confirmed?), **b)** authors interpretation, **c)** weaknesses or limitations of the study, and **d)** what could be the next step.

Please look at the samples that will be provided. Your summaries can range from 1-2 pages in length, single spaced, not more. Two pages is not usually better than one.

Remember, do the summaries on regular journal articles, not reviews, news reports, or abstracts.

All of this should be in your own words. Do not plagiarize! If you are describing the same thing as the authors of the article, your words might sometimes be similar, but they should not be identical.