

PSYC 497
Senior Seminar
Spring 2019

Sleep and Circadian Rhythms



A good laugh and a long sleep are the best cures in the doctor's book. ~Irish Proverb

If people were meant to pop out of bed, we'd all sleep in toasters. ~Jim Davis

Never needlessly fatigue the troops. ~Napoleon Bonaparte

When I woke up this morning my girlfriend asked me, 'Did you sleep good?' I said 'No, I made a few mistakes.' ~Steven Wright

The worst thing in the world is to try to sleep and not to. ~F Scott Fitzgerald

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Class meets: Section 003, Mon 5:00pm-7:30pm Miller 1109
Section 004, Wed 5:00pm-7:30pm Miller 1109



Required Texts:

1. **Basics of Sleep Guide (BSG)**, 2nd ed. Sleep Research Society,
<http://www.sleepresearchsociety.org/store/store.aspx?d=5>
2. **Online text:** <http://www.sleepsources.org/uploads/sleepsyllabus/sleephome.html>
3. **Additional original articles on Canvas and as assigned**

COURSE OVERVIEW AND OBJECTIVES: For most humans, sleep is an activity that occupies approximately one-third of their life. Despite this prominent position among human behaviors, most people know little about what happens during sleep and the significance of sleep for psychological and physiological functioning. The purpose of this course is to survey the contemporary scientific literature on sleep, emphasizing normal functioning, mechanisms involved in sleep, and clinical sleep disorders. Students will gain familiarity with the science of sleep and circadian rhythms as well as the research methods employed in this field of study. Students also will be familiar with sleep assessment to include basic scoring from polysomnography plus know how to evaluate and critically examine sleep science articles.

COURSE FEATURES: We will use Canvas for many assignments and correspondence as well as posting grades. This course will consist of two exams, a one hour teaching lesson by you, two article reviews (pop vs science), an annotated bibliography, and a final paper of your own self-assessment of your sleep and circadian rhythms. Your final grade will be based upon cumulative points for the semester. Here's a breakdown of how the course will work:

A. Student lectures/discussion:

1. **Teaching:** Each lucky student in this class will prepare a college level lecture based on one of the chapters in the BSG or online text. You must give a basic overview and presentation of your chapter using **established pedagogical tools using typical technology such as Prezi, PowerPoint**, etc which will be shared to the class on Canvas. This lecture should be about **50-60 minutes** long. You may not understand everything in the chapter but as the teacher for the day, the onus is on you to figure things out as you are the de facto instructor so you must at least look like you know what you are talking about. You may want to access other resources (ie, undergrad biopsychology text, online resources, discussion with GA, etc.) Each student teaching that day will provide me with **three multiple-choice** questions as part of the requirements for this portion of class. The M/C questions are due one week before the exam so are not required on the day you present (after all, good instructors wait until after discussions and lecture to prepare exam questions.) Think the M/C questions out carefully. I will use at least one of them for the exam and may modify at my discretion.
2. **Discussions (pop vs science):** The discussions will consist of one prepared overview of a popular article from the past 10 years that relates to sleep or chronobiology. Then review the peer reviewed article that the pop article referenced. How accurate did the journalist convey the findings? What did the researchers actually say? How might it have been better represented? So you must come prepared to lead a discussion about both the pop article and the science article. Use of PowerPoint or Prezi is again encouraged. You may not understand everything in your article and your classmates may not either but as the leader it is up to you to find out, this may involve doing research on previous articles, books, online resources, etc. When you are presenting, you are the de facto

instructor so I expect you to know what you are talking about (or make it sound like you do). **Each discussion on pop article/peer reviewed article should be limited to 15-20 minutes.** Again, you can choose any article that is of interest to you that has been featured in the media. Let me or the GA know of your choice at least a week before you present to your peers.

B. Annotated bibliography:

The purpose of this assignment is to begin to get acquainted with the process of turning some interesting whimsy into a testable hypothesis. In this assignment, you must 1) find some topic of sleep/chronobiology you find interesting, *perhaps related to your intervention* as this will make your sleep assessment paper easier to write. You may talk with classmates, friends, significant others, insignificant others, allies, enemies, GAs and me for ideas. 2) Do a lit search on this topic to see what's already been tested and submit an annotated bibliography to me by March 30th. Your bibliography must include *at least 7* peer reviewed abstracts or articles. I will provide a template in APA style on Canvas.

C. Sleep assessment paper:

This will document your sleep patterns over the course of the semester through April 20th. Not only will this be for credit but also should be informative if not edifying. This will take some discipline but once you make it part of your semester routine it will come quite easily. The journal will be somewhat standardized based the diary that I provide but you may design your own instead.

Use of **additional sleep assessment measures** such as "FitBit" or "Sleep cycle" app or other iPhone or Android technology is required. Each journal entry should be included in your final report and part of the assessment should include a comparison to what your technology indicated about your sleep as compared to what you estimated in your written journal. I also will expect an **8-10 page** synopsis to accompany a **final paper in APA format**. This should be in the form of a short article in a scientific journal and you are the subject (N=1).

This self-assessment should involve some sort of **intervention** during the course of the semester. This intervention might be a number of things lasting a very short time or much longer. You will track how this intervention impacts your sleep quality and/or quantity or your waking quantity/quality or both. The type of intervention should be justified in your paper with a review of the literature that may have led to your choosing this intervention (the annotated bibliography below should be helpful on this). The intervention could be as simple as some new behavioral technique to improve your sleep or waking state across a school week or weekend. Could be diet or drinking changes, etc. Charts, graphs, tables, or other form of visual aids are expected along with the APA style report. **Quantitative data analyses are strongly encouraged.** Please consult with your GA on what statistic might be appropriate for your paper.

D. Exams:

As stated above, you will have two exams in this course. The exam content will be drawn from the readings in the BSG text, any Dement book readings, online text, and will also include information from lecture. Tests will consist of multiple choice, fill-in-the-blank, short answer, and essay in some combination.

Jeff or GA Lectures:

I will do some lectures based on past resources and from the Online text and some outside material, especially the first couple lessons so we all have a good understanding of sleep before we start the discussions and teaching. I will also occasionally lecture some throughout the semester, but not every meeting. I will post my PowerPoint slides after each day, even if I don't lecture from them. And of course, all students who are leading lectures will turn in their PowerPoint slides in to me or the GA so that we can post. These are all testable. You are our top senior students of course and you need to be

both a learner and a leader in the classroom via the above features.

ETIQUETTE:

Please observe respect and understanding for your classmates. Although each the following guidelines may seem like common sense, please read them carefully and take each one *very* seriously. Respect for all is a big thing in this class.

- If you have questions—please ask. Do not assume that I can read your minds, your body language, tea leaves, Chakras, etc. I am here to help so struggling silently is an unfortunate thing to do.
- Please be on time to class.
- Please do not talk to your neighbor during class. At the very least, limit it extensively.
- Please let me know if you need to leave class early or arrive late.
- Please do not shuffle papers, books, or backpacks until we have finished with class for the day.
- In discussion, please do not monopolize class discussions.
- Do not use language that may be offensive to others—you might make fun of being “PC” but the idea is to be respectful to others.
- Please do not use your cell phone to accept or place calls or text messages or snaps, etc. during class.
- You may use a computer, notebook etc. to read an article we are discussing, but please turn off wifi.
- Please turn OFF your cell phone notifications before entering the classroom and keep it off until class is over.

GRADING:

In summary, there are 600 points possible for this course:

- Exam 1 = 150
- Exam 2 = 150
- Annotated Bibliography = 50
- Journal Articles Pop vs Science = 50
- Teaching/Lecture of chapter = 100
- Final self-assessment paper = 100

Final grades will be assigned according to the following schedule:

SCORE	GRADE
93-100	A
90-92.9	A-
87-89.9	B+
83-86.9	B
80-82.9	B-
77-79.9	C+
73-76.9	C
70-72.9	C-
60-69.9	D
Less 60	F

ACADEMIC INTEGRITY: You have a code. Take it VERY seriously. I do.

EXTRA CREDIT: No. Don't ask.

TENTATIVE COURSE OUTLINE (subject to change): (Online=online text, BSG = Basics of Sleep Guide text).

Week of	Text Readings / General Lecture Topics	notes
Jan 7	Introduction and Syllabus: Online Chapters A, B, C, D	All lecture day
Jan 14	Normal sleep: Online E, F, I; Dement chapter 2 on Canvas	All lecture day
Jan 21	MLK day no class	
Jan 28	Neurobiology: Sleep and Affect Ch. 1; Online Chapter K	GA lecture over Ch. 1 "Sleep and Affect" and pop vs science
Feb 4	Development: BSG chapter 3; Neurochemistry: BSG Chapter 6, Online Chapter J	Student 1 lecture Ch. 3; Student 2 lecture Ch. 6; Student 12 pop vs science article
Feb 11	Physiology in sleep: BSG chapter 15, 16	Student 3, 4 lecture; Student 11 pop vs science article
Feb 18	Physiology in sleep: BSG chapter 17B	Student 5 lecture; Student 9 pop vs sci article; Student 10 pop vs science article
Feb 25	Exam I	
Mar 4	Spring Break (read online Chapter G)	
Mar 11	Biological Rhythms: BSG chapter 18A; Ch. 19	Student 6 lecture 18A; Student 7 lecture Ch. 19; Student 8 article discussion
Mar 18	Sleep Deprivation: Comparative chapter BSG 20	Student 9 lecture; Student 5 article
Mar 25	Sleep Deprivation: Human BSG chapter 21	Annotated Bib due! Student 8 lecture; Student 7 article
Apr 1	Sleep Deprivation: Cognitive performance BSG chapter 22	Student 10 lecture; Student 6 and 4 articles
Apr 8	Disorders of Sleep BSG Chapter 8, (Online Chapter L)	Student 11 lecture; Student 3, 2 article
Apr 15	Disorders of Sleep BSG Chapter 10	Assessment paper Due! Student 12 lecture, Student 1 article
Apr 22	BSG Chapter 9. Neuropharmacology of disorders	GA lecture. Catch up
Apr 29	Final Exam at class time. Room TBA	