

Sleep and Circadian Rhythms
PSY 493-004(W)
Monday & Wednesday 10:20-11:40

Instructor: Kimberly Fenn, Ph.D.

Office Hours: Monday 11:40-12:40, and by appointment

Zoom Link: <https://msu.zoom.us/j/96081234489>

Password: PSY493

Email: kfenn@msu.edu

COURSE DESCRIPTION

This course is designed to give you an overview of research on sleep and circadian rhythms. In this course we will review the basic methodology, theories, and findings in these two very related, but in many ways, parallel fields. Because this is a psychology course, it will primarily take a psychological perspective to the study of sleep and circadian rhythms. However, the course will be heavily influenced by neuroscience, biology, and physiology. The course will survey seminal findings in these fields to give you an overview of the psychology of sleep. Although the scientific study of sleep has had a relatively short history, the field is rather large. This course will give you a basic understanding of the biological underpinnings of sleep and circadian rhythms and will survey topics such as sleep deprivation, sleep disorders, circadian rhythms, circadian rhythm disorders, from cognitive, biological, and physiological perspectives. Note that while the course will discuss dreams and theories of dreaming, this will only be a very minor part of the course. Students interested in taking a course on dreams and dream interpretation would not be advised to take this course.

COURSE FORMAT

This course is considered a synchronous course, meaning that it meets virtually at the scheduled meeting times. However, it will actually be a mix of a synchronous and asynchronous course. We will meet each week on **Monday** but we will not meet on **Wednesday** (except for the very first Wednesday – 1/20/21 and the final two Wednesdays 4/14 & 4/21). Most weeks, lectures will be split up to have both synchronous and asynchronous portions. That is, I will lecture during the synchronous session on Monday and I will post the remaining lecture material on D2L. On some weeks, we will have guest presentations or writing workshops on Mondays. On those weeks, all lecture material will be posted online. My goal in this format is to try to reduce zoom fatigue while also creating an interactive environment.

COURSE ZOOM LINK

<https://msu.zoom.us/j/96658276705>

Password: PSY493

REQUIRED READINGS

There is no textbook for this course. There will be readings from *Principles and Practice of Sleep Medicine*, by Kryger, Roth, and Dement. This text is available online at the MSU library website. If you type the name of the book into main search page, you will be directed to the electronic version of the book. On certain weeks, the readings will not be book chapters, but will be empirical papers or review papers from peer-reviewed journals. These will be available on the course website on D2L. A list of the readings for each week is included in this syllabus.

SCIENCE FESTIVAL PRESENTATION

The primary product of course will be a 20-30 min presentation that you create for the MSU Science Festival <https://sciencefestival.msu.edu/>. For these presentations, you will work with another student on the topic of your choice (approved by me). Over the course of the next three months, you will become experts on your topic. You will read a minimum of 10 empirical papers on the topic (likely more) and you will have a deep level of knowledge on your topic; you will be able to answer questions about it, without consulting your notes or other material.

The presentation itself should be engaging, enjoyable, and educational. You should strive to use demonstrations as much as possible. You are permitted to use powerpoint or any other office programs, however, you are **STRONGLY** discouraged from using multiple lines of text on your slides. You should try to use images and demonstrations as much as possible. You may use other sources to generate ideas for how to do this but be creative! **This is your opportunity to get the audience excited about the science of sleep.** In preparing this, think back on your educational experiences. Which courses/lectures did you enjoy the most? Likely, the courses (or individual lectures/talks) that you enjoyed the most were the most engaging, interesting, and enjoyable. You also likely remembered more from them than from the more dry or boring lectures.

There is a list of potential Science Festival Topics posted on D2L. This is not an exhaustive list; if there is a topic that you are interested in pursuing, please contact me for approval.

We will choose topics randomly on 1/25/21. Please review the list prior to this and if there is a specific topic that you would like to pursue, please email me by **11:59pm on 1/24/21**. Topics will be granted on a first-come, first-served basis so I would strongly recommend that you email me once you choose a topic. Also, if you have a second choice, I recommend that you send that as well. To determine groups, I will first invite you to choose partners. If you know someone in the class and would like to work with them, you may. Please email me by **11:59pm on 1/24/21** if you would like to request a partner. Both individuals must comply.

You will have TWO opportunities for this presentation. You will record a presentation that will be posted on the Science Festival website and you will also give your presentation to the class. This is designed so that you can show your knowledge and your ability to communicate your knowledge both to a broad audience and to a scientific audience. The presentation that you create for the Science Festival should be accessible to a broad audience. For this presentation, you should assume that the audience has only a rudimentary knowledge of sleep. Many of you will therefore not be able to showcase the full range of your knowledge. Your presentation to the class should be targeted to a scientific audience and should go into more depth than your festival presentation. You should also be able to answer any questions that the audience has. This includes your fellow classmates, the

instructor, and potentially graduate students or other undergraduate students who may be invited to watch the presentations.

PAPERS

This course satisfies the tier-two writing requirement at MSU and there will be a strong emphasis on writing. Of course, you will *write* your Science Festival presentation so that will be the primary writing in the course. However, the course is designed to help develop and foster your writing skills in a non-punitive environment. You will be given the opportunity to rewrite all papers in the course and you will receive the highest grade for the paper. That being said, I expect you to put forth full effort on the first draft. If you submit a skeletal version of the first draft, you will not be permitted to rewrite.

Paper 1: Personal statement

In the first paper (~2 pages), you will write about a topic on which you are an expert: you. Many of you will apply (or have applied) to graduate school, medical school, or law school. Your first paper will be to write a personal statement that you could submit to one of these schools. There is some variability in what should be included in statements for each so you may choose which type of school you are writing for. I have worked with many students on their statements and unfortunately, students have a lot of trouble with these. The goal of this assignment is to help you use basic principles of writing to craft a powerful essay that will help you in your future endeavors.

Paper 2: Abstract for Science Festival

An abstract is a short summary of either a talk or a presentation. In this summary, you should explain what the general topic is and also explain what the attendee can hope to gain from watching your presentation. These will vary widely, based on topic. Some groups may need 1-2 sentences just to define the topic to a general audience. For others, the topic may be well known and the goal of the abstract will be to explain what new information individuals will derive from the talk. There is a strict **150 word** limit to the abstract.

Paper 3: Transcript of Festival Presentation

Before you record your presentation, you should write out exactly what you want to say. This transcript will function as your third paper. Length may vary considerably, depending on the number of demonstrations that you plan on conducting during the session. Note that you will not be tied to this transcript. In fact, you are encouraged to try to go “off script” a bit so that your presentations are more natural. However, you should not record your presentation without first fully writing it. Because this paper will be the prose in your presentation, it should be accessible to a broad audience. This means that any jargon or scientific terms should be defined and kept to a minimum.

Important: Papers are due at precisely 10:20 on the due date. I expect these to be uploaded by 10:20. You do not need to print anything so there are no excuses for late submissions. Submission more than 5 minutes late will result in a two level grade reduction. For example, if the paper would have earned a B, the final grade will be a C+. **There will be no exceptions to this rule and excuses will not be tolerated.**

TURNITIN POLICY

All papers will be submitted online using Turnitin, a system designed to ensure honesty and academic integrity.

Consistent with MSU's efforts to enhance student learning, foster honesty, and maintain integrity in our academic processes, instructors may use a tool called Turnitin to compare a student's work with multiple sources. The tool compares each student's work with an extensive database of prior publications and papers, providing links to possible matches and a "similarity score." The tool does not determine whether plagiarism has occurred or not. Instead, the instructor must make a complete assessment and judge the originality of the student's work. All submissions to this course may be checked using this tool.

Students should submit papers to Turnitin Dropboxes without identifying information included in the paper (e.g., name or student number), the system will automatically show this information to faculty in your course when viewing the submission, but the information will not be retained by Turnitin.

WRITING WORKSHOPS AND PEER REVIEW

Because this is a writing course, there will be days devoted to discussing writing. In these workshops, you will engage in peer review. Your participation in these exercises is a required part of the course and 5% of your grade will be determined by this. You must be present on the day of the Writing Workshop to obtain credit for this portion of your grade. Lastly, there may be some small sleep-related assignments that will contribute to this grade. At certain points in the course, you will be asked to record your sleep patterns, dreams, and other aspects of your sleep/wake cycle.

ATTENDANCE AND CLASS PARTICIPATION

It is assumed that you will attend and actively participate during all class sessions. If you must miss class for some reason, please notify me (in advance, if possible). You are responsible for what transpires during class sessions whether you are there or not.

EXAMS

There will be two exams in this class. The exams will NOT be cumulative. You will be responsible for all material associated with the course on the exams. This includes material presented in lecture as well as information from the chapters in *Principles and Practice of Sleep Medicine*, and from empirical papers, when appropriate. You will have access to your materials during the exam but you are not permitted to talk to anyone during the exam. You must remain on zoom with your camera and microphone turned on for the duration of the exam. Exams will require that you explain various concepts in the course. Because you have access to your materials, there will not be any simple memory questions.

Make-up exams: Make-up exams will only be given in case of: 1) a documented medical or family emergency, or 2) a documented scheduled conflict, such as a religious holiday or required participation in a university-sanctioned event. In either case, you must send an email to the professor as soon as you are aware of this conflict. In case of a scheduled conflict, you must send this email at least a week in advance of exam day. Absence from an exam for any other reason will result in a grade of 0 for that exam.

EXTRA CREDIT FOR RESEARCH PARTICIPATION

One fundamental way of learning firsthand about psychological research is to participate in research studies. You may participate in psychological experiments and earn 3 extra percentage points added to your final grade. For extra credit, every 1 hour of participation is worth 0.5 of a point on your final grade. Therefore, to receive one additional point, you must complete 2 hours of experiments. To receive the full 3 extra credit points, you must complete 6 hours of experiments. If you would like to sign up to participate in research, a document will be posted on D2L with instructions.

If you have any questions regarding research participation, please contact: Audra Jeffrey, the Human Subject Pool Administrator, Room 100, Psychology Building, jeffre22@msu.edu. It is your responsibility to sign up, participate in the experiments, and to track your personal history on the computer. Neither the instructor nor the course assistants have a record of your research participation until the end of the course. We do not know how many credits you have or if you have penalty points. **ALL questions regarding research participation should be directed to Audra Jeffrey.**

Note: Make sure that you are on the psychology Sona site. The Department of Communication Arts and Sciences also has a Sona site. We do not have access to this data and cannot grant participation credit for experiments done under the other site.

Deadline: Research participation must be completed by April 23rd, at 5:00 pm.

Alternative to research participation: If you do not wish to participate in psychology experiments, you may obtain extra credit by writing a one-page paper for each credit-hour of research participation, for a total of 6 one-page papers. Detailed explanation of the paper requirements will be posted on D2L.

GRADING

Your grade will be calculated as follows:

Exam 1: 15%

Exam 2: 15%

Paper 1: 10%

Paper 2: 5%

Paper 3: 15%

Science Festival Presentation (recorded): 15%

Science Festival Presentation (to class): 15%

Reading list: 5%

Peer review: 5%

***All assignments that constitute 5% of your grade will not be given qualitative grades. This means that if you submit these assignments on time, you will receive full credit.*

Grades will be assigned on the following scale:

90-100% = 4.0

75-79% = 2.5

60-64% = 1.0

85-89% = 3.5

70-74% = 2.0

< 60% = 0

80-84% = 3.0

65-69% = 1.5

ACADEMIC HONESTY

All students are responsible for knowing and following the university policy on academic integrity and plagiarism. Article 2.3.3 of the Academic Freedom Report states, "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." In addition, the College of Social Sciences adheres to the policies on academic honesty specified in General Student Regulation 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations (See Spartan Life: Student Handbook and Resource Guide and/or the MSU website www.msu.edu).

You are expected to complete all course assignments without improper assistance from any source. Specifically, you may not assist anyone or be assisted by anyone on an exam, and you may not use the text or any notes during an exam. In addition, your written work must be your own, and you must cite sources appropriately. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com web site to complete any course work in this course. The course will be run according to these rules without exception. Any student caught cheating or otherwise violating the MSU academic integrity policy may receive the maximum punishment, including a grade of 0.0 in the course. Visit the following websites for more details about MSU's Academic Integrity policies:

<https://www.msu.edu/unit/ombud/academic-integrity/index.html>

<https://www.msu.edu/unit/ombud/academic-integrity/student-faq.html>

When in doubt, students are urged to ask the instructor about the appropriateness of any practice.

Important Note: Submitting the same paper for two classes is considered a form of plagiarism and must be avoided.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Students with disabilities should contact the Resource Center for Persons with Disabilities to establish reasonable accommodations. For more information, call 884-7273 (voice), 355-1293 (TTY), or visit <http://rcpd.msu.edu>.

DISRUPTIVE BEHAVIOR

Article 2.3.5 of the *Academic Freedom Report* (AFR) for students at Michigan State University states: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.3.10 of the AFR states that "The student has a right to scholarly relationships with faculty based on mutual trust and civility." General Student Regulation 5.02 states: "No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Faculty Judiciary process.

RESPECT AND TECHNOLOGY IN THE CLASSROOM

Please respect your instructors and fellow students by turning off your cellphone ringer and/or other electronic communication devices during class. Distracting activities such as instant messaging, writing e-mail, social networking (instagram, facebook, etc.), or playing games is strictly prohibited.

GETTING HELP

The best way to get help is to come to office hours. If you can't make office hours, you can contact the instructor to make an appointment for a different time. You may also ask questions via e-mail. I will try to be diligent about responding, but occasionally your message may be hidden amongst the spam mail. If you do not hear back from me in a reasonable time, please send the message again.

IMPORTANT DATES

2/15: Rough draft of Paper 1 due

2/17: Reading list due

2/24: Final draft of Paper 1 due

3/1: Exam I

3/8: Paper 2 due

3/15: Rough draft of Paper 3 due

3/22: Presentations due

3/29: Final draft of Paper 3 due

4/12: Exam II

January 11		
January 13	<i>Read, Review and Reflect</i>	
January 18	<i>Martin Luther King Day – no class</i>	
January 20	Class Orientation	
January 25	Sleep: Basic principles and measurement Choose Science Festival topics and groups	Kryger, Roth, & Dement: Chapter 2
January 27	Basic principles of sleep (cont'd)	
February 1	Presentation on Effective Search Strategies Andrew Peterson, Psychology Librarian, MSU Libraries	
February 3	Circadian rhythms: Basic principles and measurement	Kryger, Roth, & Dement: Chapter 32
February 8	Need for sleep: Sleep homeostasis	Kryger, Roth, & Dement: Chapter 37
February 10	Sleep Deprivation	Kryger, Roth, & Dement: Chapter 5
February 15	Writing Workshop I **Paper I due at 10:20	
February 17	Common Sleep and Circadian adaptations: Jet lag and Shift work **Reading list due at 10:20	Kryger, Roth, & Dement: Chapter 39
February 22	Presentation on Science Communication Roxanne Truhn, Coordinator, MSU Science Festival	
February 24	Sleep and Aging **Final draft of Paper 1 due	Kryger, Roth, & Dement: Chapter 3
March 1	Exam I	
March 3	<i>Wellness day – no class</i>	

March 8	Sleep Disorders I: Narcolepsy, Cataplexy, and Parasomnias **Paper 2 due at 10:20	Kryger, Roth, & Dement: Chapter 85
March 10	Sleep Disorders II: Apnea	Kryger, Roth, & Dement: Chapter 105
March 15	Writing Workshop II **Paper 3 due at 10:20	
March 17	Sleep Disorders III: Insomnia	Kryger, Roth, & Dement: Chapter 76
March 22	Neural Mechanisms of sleep and physiology of sleep **Presentations due at 10:20	Kryger, Roth, & Dement: Chapter 7
March 24	Function of Sleep	
March 29	Physiology of the circadian system **Final draft of Paper 3 due	Kryger, Roth, & Dement: Chapter 34
March 31	Seasonal Rhythms	TBD
April 5	Dreams	TBD
April 7	Sleep and Memory	TBD
April 12	Exam II	
April 14	Group Presentations	
April 19	Group Presentations	
April 21	Group Presentations	