

**PSYC 477**
**Sleep & Biological Rhythms**
**Winter 2017**

<b>Instructor:</b>	Dr. Michael Antle	<b>Lecture Location:</b>	SH 274
<b>Phone:</b>	403-220-2574	<b>Lecture Days/Time:</b>	MWF 11:00-11:50am
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<b>Office:</b>	A018		
<b>Office Hours:</b>	By appointment		

### Course Description

Behaviours are temporally coordinated and occur in a rhythmic fashion. The most obvious rhythmic behaviour humans engage in is sleeping; we spend 1/3<sup>rd</sup> of our lives asleep. This course will survey the behavioural, physiological, neural and clinical aspects of sleep and rhythms.

### Course Learning Outcomes

The Department of Psychology is committed to student knowledge and skill development. The table below lists the key learning outcomes for this course, the program-learning outcomes they facilitate (see [psyc.ucalgary.ca/undergraduate/program-learning-outcomes](http://psyc.ucalgary.ca/undergraduate/program-learning-outcomes)), and the expected level of achievement.

Course Learning Outcomes	PLO(s)	Level(s)
By the end of this course students should be able to:		
1. Differentiate how sleep changes over the night, lifespan and through evolution.	1	C
2. Outline the neural underpinnings of sleep, wake and circadian rhythms	1	C
3. Assess various sleep disorders	1	C
4. Debate the various functions of sleep	2	C
5. Explain the formal properties of biological rhythms	1	C
6. Analyze the primary literature in sleep and circadian fields	8	C
7. Evaluate claims made in the media concerning treatments for sleep complaints	2	C

Notes. PLOs = Program-Learning Outcomes: 1 = demonstrate knowledge of psychological sciences, 2 = think critically and solve problems, 3 = conduct research and analyze data, 4 = communicate effectively, 5 = demonstrate information literacy, 6 = understand and implement ethical principles, 7 = apply psychological knowledge and skills. Level of PLO achievement facilitated by this course: I = introductory, C = competency, A = advanced.

### Prerequisites

Psychology 312 - Experimental Design & Quantitative Methods  
 Psychology 375 – Brain and Behaviour

### Required Text

None – references to recommended readings will be provided

## Evaluation

Mid Term	In Class – Feb 27 <sup>th</sup>	30%
	• Includes all material up to Feb 27 <sup>th</sup>	
Final	During exam period	30%
	• Includes all material covered following the midterm exam	
Paper	Due in Class, April 12 <sup>th</sup>	25%
Participation	Weekly Discussions / Thought papers / Assignments	15%

- Exams will be short answer format.
- Exams will emphasize lecture materials, but will also include assigned readings
- The use of electronic devices, books and notes are not permitted during tests

**Discussions/ Thought papers:** You will be assigned a topic at least a week before the discussion day. In preparing for the discussion you will be asked to prepare a 1-2 page thought paper about your topic. Thought papers should be organized as if answering the question “Tell me about \_\_\_\_”.

**Assignments:** Students will be required to complete and submit three questionnaires on sleep and circadian habits. Data collected by the instructor from these instruments will only be used for educational purposes within the course and will not be retained afterwards. Completing these questionnaires will provide an experiential learning opportunity that will help students understand the sleep concepts discussed in class, and relate them to their own experiences. The questionnaires are:

1. Pittsburgh Sleep Quality Index
  - [http://www.psychiatry.pitt.edu/sites/default/files/page-images/PSQI\\_Instrument.pdf](http://www.psychiatry.pitt.edu/sites/default/files/page-images/PSQI_Instrument.pdf)
2. NSF Sleep Diary
  - <https://sleepfoundation.org/sleep-diary/SleepDiaryv6.pdf>
3. Munich Chronotype Questionnaire
  - [https://www.bioinfo.mpg.de/mctq/core\\_work\\_life/core/introduction.jsp](https://www.bioinfo.mpg.de/mctq/core_work_life/core/introduction.jsp)

**Final paper:** Your term paper can be on any Sleep or Rhythms topic that interests you. This must be novel work, which has not been prepared for previous classes. Please have your topic approved by the professor prior to beginning. While there are no official length requirements, papers that adequately address topic areas are usually between 15-20 double-spaced pages with 20-30 references. Papers will be graded on the quality of your writing and argumentation rather than the quantity of writing or the amount of effort you put towards preparing your paper. Late papers will lose 10% per day late, including weekends.

## Department of Psychology Grade Distribution Policy

The distribution of grades in Psychology courses (the percentage of A grades, B grades, etc.) will be similar to the distribution of grades in other courses in the Faculty of Arts. The Department monitors the grade distributions of 200-, 300-, and 400-level courses in the Faculty to ensure that the grade distributions in Psychology courses are comparable. Based on these reviews, students can expect that 1) up to 30% of grades in 200- and 300-level psychology courses will be “A” grades (A+, A, and A-), and 2) up to 40% of grades 400-level psychology courses will be “A” grades.

## Department of Psychology Criteria for Letter Grades

Psychology professors use the following criteria when assigning letter grades:

**A+ grade: *Exceptional Performance.*** An A+ grade indicates near perfect performance on multiple choice and short answer exams. For research papers/essays/course projects/presentations, an A+ grade is awarded for exceptional work deserving of special recognition and is therefore not a common grade.

**A, A- Range: *Excellent Performance.*** Superior understanding of course material. Written work is very strong in terms of critical and original thinking, content, organization, and the expression of ideas, and demonstrates student's thorough knowledge of subject matter.

**B Range: *Good Performance.*** Above average understanding of course material. Written work shows evidence of critical thinking and attention to organization and editing but could be improved in form and/or content.

**C Range: *Satisfactory Performance.*** Adequate understanding of course material. Knowledge of basic concepts and terminology is demonstrated. Written work is satisfactory and meets essential requirements but could be improved significantly in form and content. Note: All prerequisites for courses offered by the Faculty of Arts must be met with a minimum grade of C-.

**D range: *Marginally meets standards.*** Minimal understanding of subject matter. Written work is marginally acceptable and meets basic requirements but requires substantial improvements in form and content. Student has not mastered course material at a level sufficient for advancement into more senior courses in the same or related subjects.

**F grade: *Course standards not met.*** Inadequate understanding of subject matter. Written work does not meet basic requirements. Student has not demonstrated knowledge of course material at a level sufficient for course credit.

### Grading Scale

A+	96-100%	B+	80-84%	C+	67-71%	D+	54-58%
A	90-95%	B	76-79%	C	63-66%	D	50-53%
A-	85-89%	B-	72-75%	C-	59-62%	F	0-49%

As stated in the University Calendar, it is at the instructor's discretion to round off either upward or downward to determine a final grade when the average of term work and final examinations is between two letter grades. To determine final letter grades, final percentage grades will be rounded up or down to the nearest whole percentage (e.g., 89.5% will be rounded up to 90% = A but 89.4% will be rounded down to 89% = A-).

### Tentative Lecture Schedule

Date	Topic/Activity/Readings/Due Date (revise and add columns & rows as necessary)	
M Jan 09	Sleep – Intro, terminology, methodology	
W Jan 11	Sleep – Intro, terminology, methodology	
F Jan 13	Sleep – Intro, terminology, methodology	
M Jan 16	Sleep – Evolution and Neural Control	
W Jan 18	Sleep – Evolution and Neural Control	
F Jan 20	Sleep – Evolution and Neural Control <i>Last day to drop Winter Term half-courses.</i>	
M Jan 23	Sleep – Neural Control <i>Last day to add or swap Winter Term half courses.</i> <i>Last day for change of registration from audit to credit or credit to audit.</i>	
W Jan 25	Sleep Disorders	
F Jan 27	Sleep Discussion – Lifespan <i>Fee payment deadline for Winter Term fees.</i>	Thought Paper 1
M Jan 30	Sleep Disorders	
W Feb 1	Sleep Disorders	
F Feb 3	Sleep Discussions – Sleep aids	Thought paper 2
M Feb 6	Sleep Disorders	
W Feb 8	Sleep and Learning	
F Feb 10	Sleep and Learning	
M Feb 13	Sleep and Learning	
W Feb 15	Sleep and Learning	
F Feb 17	Sleep Discussion – Learning and Memory	Thought Paper 3
Feb 19-26	Reading Week. No lectures. University open (except Family Day).	
M Feb 20	Alberta Family Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.	
M Feb 27	Midterm Exam	
W Mar 1	Circadian Rhythms – Basics + Properties	
F Mar 3	Circadian Rhythms – Basics + Properties	
M Mar 6	Circadian Rhythms – Basics + Properties	
W Mar 8	Circadian Rhythms – Organization	
F Mar 10	Sleep Discussions – Daylight Saving Time	Thought Paper 4
M Mar 13	Circadian Rhythms – Organization	
W Mar 15	Circadian Rhythms – Mammalian	
F Mar 17	Circadian Rhythms – Mammalian	
M Mar 20	Circadian Rhythms – Molecular	
W Mar 22	Circadian Rhythms – Molecular	
F Mar 24	Circadian Rhythms – Molecular	
M Mar 27	Circadian Rhythms – Human	
W Mar 39	Circadian Rhythms – Human	
F Mar 31	Circadian Rhythms – Human	

M Apr 3	Circadian photoreceptors
W Apr 5	Circadian Rhythms – Exercise / Non-photoc
F Apr 7	Circannual Rhythms
M Apr 10	Circannual Rhythms
W Apr 12	BSD - Review <i>Winter Term Lectures End.</i> <i>Last day to withdraw from full courses and Winter Term half courses.</i>
F Apr 14	Good Friday. No Classes. University Closed
Apr 15-26	Winter Term Final Examinations.

### Reappraisal of Grades

A student who feels that a piece of graded term work (e.g., term paper, essay, test) has been unfairly graded, may have the work re-graded as follows. The student shall discuss the work with the instructor within 15 days of being notified about the mark or of the item's return to the class; no reappraisal of term work is permitted after the 15 days. If not satisfied, the student shall immediately take the matter to the Head of the department offering the course, who will arrange for a reassessment of the work within the next 15 days. The reappraisal of term work may cause the grade to be raised, lowered, or to remain the same. If the student is not satisfied with the decision and wishes to appeal, the student shall address a letter of appeal to the Dean of the faculty offering the course within 15 days of the unfavourable decision. In the letter, the student must clearly and fully state the decision being appealed, the grounds for appeal, and the remedies being sought, along with any special circumstances that warrant an appeal of the reappraisal. The student should include as much written documentation as possible.

### Plagiarism and Other Academic Misconduct

Intellectual honesty is the cornerstone of the development and acquisition of knowledge and requires that the contribution of others be acknowledged. Consequently, plagiarism or cheating on any assignment is regarded as an extremely serious academic offense. Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Students should examine sections of the University Calendar that present a Statement of Intellectual honesty and definitions and penalties associated with Plagiarism/Cheating/Other Academic Misconduct.

### Academic Accommodation

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services ; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit [www.ucalgary.ca/access/](http://www.ucalgary.ca/access/).

Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor.

The full policy on Student Accommodations is available at [http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy\\_0.pdf](http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy_0.pdf) .

Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than 14 days after the start of this course.

### **Absence From A Test/Exam**

Makeup tests/exams are **NOT** an option without an official University medical excuse (see the University Calendar). A completed Physician/Counselor Statement will be required to confirm absence from a test/exam for health reasons; the student will be required to pay any cost associated with this Statement. Students who miss a test/exam have up to 48 hours to contact the instructor and to schedule a makeup test/exam. Students who do not schedule a makeup test/exam with the instructor within this 48-hour period forfeit the right to a makeup test/exam. At the instructor's discretion, a makeup test/exam may differ significantly (in form and/or content) from a regularly scheduled test/exam. Except in extenuating circumstances (documented by an official University medical excuse), a makeup test/exam must be written within 2 weeks of the missed test/exam during exam make-up hours provided by the department <http://psychology.ucalgary.ca/undergraduate/exam-review-and-makeup-exams>. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam [http://www.ucalgary.ca/registrar/exams/deferred\\_final](http://www.ucalgary.ca/registrar/exams/deferred_final). Under no circumstances will this be accommodated by the department.

### **Travel During Exams**

Consistent with University regulations, students are expected to be available to write scheduled exams at any time during the official December and April examination periods. Requests to write a make-up exam because of conflicting travel plans (e.g., flight bookings) will NOT be considered by the department. Students are advised to wait until the final examination schedule is posted before making any travel arrangements. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam [http://www.ucalgary.ca/registrar/exams/deferred\\_final](http://www.ucalgary.ca/registrar/exams/deferred_final). Under no circumstances will this be accommodated by the department.

### **Freedom of Information and Protection of Privacy (FOIP) Act**

The FOIP legislation disallows the practice of having student's retrieve tests and assignments from a public place. Therefore, tests and assignments may be returned to students during class/lab, or during office hours, or will be made available only for viewing during exam review sessions scheduled by the Department. Tests and assignments will be shredded after one year. Instructors should take care to not link students' names with their grades, UCIDs, or other FOIP-sensitive information.

### **Course Credits for Research Participation (Max 2% of final grade)**

Students in most psychology courses are eligible to participate in Departmentally approved research and earn credits toward their final grades. **A maximum of two credits (2%) per course, including this course, may be applied to the student's final grade. Students earn 0.5% (0.5 credits) for each full 30 minutes of participation.** The demand for timeslots may exceed the supply in a given term. Thus, students are not guaranteed that there will be enough studies available to them to meet their credit requirements. Students should seek studies early in the term and should frequently check for open timeslots. Students can create an account and participate in Departmentally approved research studies at <http://ucalgary.sona-systems.com>. The last day to participate in studies and to assign or reassign earned credits to courses is **April 12, 2017**.

### **Evacuation Assembly Point**

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The list of assembly points is found at <http://www.ucalgary.ca/emergencyplan/assemblypoints>

Please check this website and note the nearest assembly point for this course.

### **Student Organizations**

Psychology students may wish to join the Psychology Undergraduate Students' Association (PSYCHS). They are located in Administration 130 and may be contacted at 403-220-5567.

**Student Union VP Academic:** Phone: 403-220-3911 [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)

**Student Union Faculty Rep.:** [arts1@su.ucalgary.ca](mailto:arts1@su.ucalgary.ca)

### **Student Ombudsman's Office**

The Office of the Student Ombudsmen provides independent, impartial and confidential support for students who require assistance and advice in addressing issues and concerns related to their academic careers. The office can be reached at 403-220-6420 or [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca)

(<http://www.ucalgary.ca/provost/students/ombuds>)

### **Safewalk**

The safewalk program provides volunteers to walk students safely to their destination anywhere on campus. This service is free and available 24 hrs/day, 365 days a year.

Call 403-220-5333.

### **Important Dates**

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **January 20, 2017**. Last day for registration/change of registration is **January 23, 2017**. The last day to withdraw from this course is **April 12, 2017**.