

Physiological Psychology

PSY 381, The University of Rhode Island
Summer Session 2 - 2021 (revised 4-5-21)

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Office Hours: arranged as requested by student

Meeting Time: Tu, Th, 10:00 am – 1:30 pm

Class Location: Online

Required Text:

1. S. Marc Breedlove and Neil V. Watson, (2020) Behavioral Neuroscience, 9th Edition. Sinauer

Optional Reading Aimed at Providing Insights into the Study of the Biological Basis of Behavior:

1. The Selfish Gene, Richard Dawkins, (1976; 1989) Oxford University Press
Richard Dawkins is an ethologist (study of animal behavior in the natural environment) who wrote this book about genes and how they participate in evolution. It lays out the principles of how genes evolve ever more effective “survival machines”.
2. Why Evolution is True, Jerry A. Coyne, (2009) Penguin Books
This book is an easy read on the fundamentals of evolution.
3. On Human Nature, Edward O. Wilson, (1978; 2004) Harvard University Press
E. O. Wilson is an entomologist who first studied insect social life. In this book he lays out ideas on how human nature is influenced by genetics. His views formed the basis of the new science of Sociobiology. This work has been influential within sociology and psychology.

Course Goals and Outcomes:

Psychology is the study of human behavior, of what underlies it, and how individual differences in behavior come about. In recent decades, there has been an explosion in knowledge relating to the brain and how it functions in animals and in humans. Biological psychology is the study of neurophysiological and neurochemical structures and mechanisms that underlie behavior, thoughts and emotions. It includes the study of how genetic mechanisms guide the development and functioning of the underlying neural structures and mechanisms. At course completion, students should come away with:

- A detailed understanding of physiological mechanisms that underlie behavior.
- Knowledge and understanding of research methods typically employed in the study of neurophysiological mechanisms.
- Knowledge and understanding of the role genes play in creating neural structures and mechanisms underlying behavior, and how they participate in the ongoing functioning of these systems and mechanisms.
- Knowledge of the main subdivisions and some appropriate detail of the brain and nervous system.
- An ability to describe and explain the basic functioning of neural cells, sensory and motor system components, neurotransmission, neurotransmitters, basic endocrine function, some mechanisms of brain and neural cell development, and other aspects of neural structure and function that underlie key areas of behavior such as sexual functioning, learning and cognitive functioning, and emotional response.
- Basic understanding of clinical disorders and their complexity.
- Basic understanding of drug mechanisms of action and addiction.

Course Requirements:

Attendance and Participation: Students are highly encouraged to attend class online and are encouraged to ask questions and participate in discussions. Students are responsible for reviewing the online recording from a class they miss. Supplementary instructional material will be posted on Brightspace. Missing class without a valid excuse will result in subtraction of 1 point from the student's overall quiz score up to a maximum of 20 points. Thus, an overall quiz score of 95% before the attendance correction could fall as low as 75% if the student missed 20 online sessions. The overall quiz score will count 25% towards the final grade.

Please sign-in to the online Zoom classes before class starts using your **last name first**. I will use the Zoom sign-in to measure attendance. If you call in from a phone, try to use a name for your phone or let me know by email what phone number you used. I will need that to verify attendance. Please come to class, even if you are late. Some time in class is better than none.

Readings: Readings in the textbook will be assigned and are required to be read. Quizzes are online in Brightspace and are closely connected to the text in your book. Quizzes are designed to help you read the most important parts of the text. Exams will be based roughly 80% on the assigned text readings and the associated quizzes and 20% on in-class material. Optional readings will be discussed in class and discussed material can be included in quizzes and exams.

Exams and Grading:

- Approximately 10 or 11 quizzes will be given through Brightspace and are "open book". The quizzes are designed to help you read the chapters effectively for the most important material.
- Most exam questions will be similar to questions included on the quizzes.
- Averaged quiz score will count 25% of final grade.
- The mid-term exam will cover material presented from the first class to an announced class prior to the exam. The mid-term will count 35% of the final grade.
- The final exam will cover all material and will count 40% of the final grade.
- All quizzes posted to Brightspace will constitute a study guide for the mid-term and final exams. Most exam questions will be drawn from the quizzes, plus a small number of additional questions.
- There is no extra credit.
- Missing quizzes or exams will be counted as half of available points (score of 50%).
- Grading Scale: A 94-100; A- 90-93; B+ 87-89; B 83-86; B- 80-82; C+ 77-79; C 73-76; C- 70-72; D+ 67-69; D 60-66; F <60

Exam Make-up Policy: Makeups for illness, accident or personal tragedy or other serious matters preventing the student from taking the exam at the assigned time will be allowed, with review and approval of the instructor. Adequate documentation must be provided on request. Makeup exams will be done outside of class time online arranged with the instructor. Incompletes will be given only in exceptional circumstances with permission of the department chair. Extended absence for medical or family issues must be reviewed, and a course of action approved by the instructor.

Reviewing Exams & Questions About Exam Items: Limited review of an exam during class time may be conducted on topics that will benefit the class as a whole. More detailed review of exam performance can be arranged on an individual basis with the instructor.

Additional Course Information:

Students with Disabilities: If you are a student with a disability and need assistance or accommodation, contact the instructor as early in the semester as possible. Please provide appropriate documentation from URI Disability Services for Students (office at 330 Memorial Union between 8:30AM and 4:30 PM Monday-Friday).

Academic Enhancement Center and Writing Center: The work in this course can be complex and intensive. If you are having difficulties understanding the material presented in lecture or the text, please consult with Dr. Breton. For other help you may visit the Academic Enhancement Center (AEC) or Writing Center in Roosevelt Hall. You can make an appointment or walk in anytime during office hours for both the AEC and Writing Center.

Academic Honesty: As stated in the URI Student Handbook, “Students are expected to be honest in all academic work. A student’s name on any written work including assignments, lab reports, internship reports, papers, lab assignments, or examinations, should be regarded as assurance that the work is the result of the student’s own thought and study.” Please refer to the URI student handbook for more specific details. Ethical behavior during exams is required. If a student is caught cheating, he/she may receive a failing grade on the exam and possibly a failing grade in the course.

Student Responsibilities: Students are responsible for completing all assignments, attending online lecture, being prepared for lecture, and seeking assistance for questions about the course material. Students are expected to be on time and to be respectful of others during class. However, please come to class even if you are late. While in class, please do not engage in activities unrelated to class.

PSY 381 Course Schedule (subject to change with notice) (revised 4-5-21)

Week	Date	Topics, Readings, Assignments, Due Dates, Deadlines
1	June 29 June 29	Introduction to course concept and requirements (Ch 1). Brief tutorial on genetic and cell biology concepts Assignment: read Chapters 1 and 2 Continued Introduction to concepts
2	June 29 July 1	Functional Neuroanatomy overview and concepts (Ch 2) Next: read Chapter 3, Neurophysiology; Generation, Transmission, and Integration of Nerve function (Ch 3) Next: read Chapter 4 The Chemistry of Behavior
3	July 1 July 1	More on nerve and synaptic function (Ch 3 and Ch 4) Neural Mechanisms and Function (Ch 3 and 4)
4	July 6 July 6	Neural Mechanisms and function summary Next: Read Chapter 5 Hormones and the Brain Hormones – another means of neuronal communication (Ch 5)

Week	Date	Topics, Readings, Assignments, Due Dates, Deadlines
5	July 6 July 8	Summary of neuronal and hormonal control of the nervous system (Chapters 3-5) Next: read Chapter 7 Development of Brain and Behavior Development of the nervous system (Ch 7)
6	July 8 July 8	More on Development (Ch 7) Sensory processing: how information gets to the brain (Ch 8) Next: Read Chapter 8 Sensory Processing
7	July 13 July 13	Mid Term Exam (Chapters 1-5, 7) Sensory Systems and Somatosensory Processing (Ch 8) Next: Read Chapter 9 Hearing, Balance, Taste, Smell
8	July 13 July 15	Sensory Processing continued (Ch 8) Auditory System (Ch 9)
9	July 15 July 15	Auditory System continued (Ch 9) Vestibular or Balance System (Ch 9) Taste and Olfaction continued (Chap 9) Next: Read Chapter 10 Vision
10	July 20 July 20	Vision I Receptor Transduction, retinal organization, visual pathway, visual fields, receptive fields (Ch 10, p 309-326) Vision I continued plus Vision II (Ch 10)
11	July 20 July 22	Vision II Spatial frequency, color vision, cortical mapping and organization (Ch 10, p 326-343) Next: Read Ch 12 Sex and Ch 15 Emotion Sex (Ch 12)
12	July 22 July 22	Emotion (Ch 15) Next: Read Chapter 17 Learning and Memory Learning and memory; what are the mechanisms? (Ch 17)
13	July 27 July 27	Learning and Memory; more on mechanisms (Ch 17) Learning and Memory continued - NMDA and AMPA Plus: Discussion of Language Learning from Chapter 19 Language (no quiz) Read: Science article on Phonemes in Brightspace (Last Class)
14	July 29	Final Exam – 10:00 am to 1:30 pm on Thursday July 29
15	August 6	Grades due in eCampus by 12 pm