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PSYX 571.01: Advanced Physiological Psychology

Stuart Hall

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Psyx 571 – Advanced Physiological Psychology

Fall 2014

Course Location and Time

Skaggs 246
Tuesday 6:00 – 9:00 pm

Instructor Information

Instructor: Stuart Hall, Ph.D.
Email: stuart.hall@umontana.edu
Office: Skaggs 207
Office hours: Tuesday and Thursday 12:30 – 2:00, and by appointment

Recommended Text

Carlson, N.R. (2012) *Physiology of Behavior*, 11th Edition, Allyn & Bacon.

Course Goals and Objectives

Knowledge Base

- Gain an understanding of the different cells that make up the central nervous system and how “communication” occurs within a neuron and between neurons.
- Learn basic pharmacology and understand how psychoactive drugs work by interacting with the various stages of neural communication and synaptic transmission,
- Learn functional neuroanatomy.
- For the visual, auditory, somatosensory, gustatory, olfactory and vestibular sensory systems, understand how stimuli are detected by specialized receptors and sensory information is coded in the brain. Learn the associated neural pathways and brain structures involved in these sensory systems.
- Understand the organization and contribution of major neural pathways associated with movement.
- Learn the physiological mechanisms of sleep and become familiar with some sleep disorders.
- Understand the synaptic events and neural systems that are involved in learning and memory. Also gain knowledge about human memory dysfunction and animal models used to study learning and memory.
- Learn the brain mechanisms involved in speech production and comprehension and become familiar with some language disorders.

Intellectual and Communication Skills

The expectation is that, as a graduate level course, students in PSYC 571 should be able to learn and utilize the assigned material in an advanced manner. For example, you should be able to extract and organize material from both lectures and the text in a manner that will promote effective learning. You should be able to work with information (e.g., synthesize, evaluate and generalize from information provided in class/text) and reason toward answers--not just regurgitate information. You should also be

able to effectively communicate your knowledge in writing and/or diagrams. Certain questions in each test will be designed to assess these skills. Finally, most students find that this class requires a good deal of studying to master the material. A positive attitude, hard work, and a consistent work ethic will pay off.

Course Guidelines and Policies

Drop Date

Beginning the 46th instructional day of the semester through the last day of instruction before scheduled examinations, [students must petition to drop](#).

Academic Honesty

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the [Student Conduct Code](#).

Disability Modifications

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and [Disability Services for Students](#). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or call 406.243.2243. I will work you and Disability Services to provide an appropriate modification.

Assessment and Grades

Grades will be based on the average of the 4 test scores (equally weighted): 90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D, 59% and below=F. A plus/minus grading system will not be used. Each test is worth 50 points and will consist of short answer questions. Test questions will require that you communicate clearly, reason towards answers from information that is provided in lecture and text, draw effective diagrams, and synthesize several items of information into a well formulated answer (see above).

- **Test 1** covers section 1 lectures and chapters 2 and 4
- **Test 2** covers section 2 lectures and chapter 3
- **Test 3** covers section 3 lectures and chapters 6, 7 and 8
- **Test 4** covers section 4 lectures and chapters 9, 13, and 14

Makeup Tests

If you have to miss a scheduled exam, please contact me before the test to discuss the situation and make arrangements for a makeup.

Lectures and Reading Assignments

You will be responsible for all information from the lectures as well as the text--including material in the reading assignments not covered in class. Please be sure to keep up with your reading and attend lectures.

Course Schedule

Section	Topics, Readings, Exams	Details
SECTION 1	Topics	Cells of Nervous System, Neural Communication,

Section	Topics, Readings, Exams	Details
	Readings	Synaptic Transmission, Neurotransmitters, Pharmacology of Synapses Chapters 2 & 4 from text Original articles on Moodle
	TEST 1: September 11	
SECTION 2	Topics	Neuroanatomy
	Readings	Chapter 3 from text Original articles on Moodle
	TEST 2: October 2	
SECTION 3	Topics	Visual System, Somatosensory System, Auditory System, Vestibular System, Olfactory System, Motor System
	Readings	Chapters 6, 7, and 8 from text Original articles on Moodle
	TEST 3: October 30	
SECTION 4	Topics	Sleep, Learning and Memory, Emotion, Reinforcement, Human Communication
	TEST 4: December 4	