

Fall Semester 2015
Stony Brook University
Department of Psychology, Subfield Integrative Neuroscience
PSY 356, Section 01—Physiological Psychology
This course satisfies SBC category STEM+
MWF: 11:00-11:53, Javits Lecture Hall 101

Instructor: Dr. Brenda Anderson

Office Hours: Wed. 12:00-1:00, Friday 12-1

email: Brenda.Anderson@stonybrook.edu**

Office: Psychology B, Rm 216

Telephone: 632-7821

****All correspondence should be professional. Please include “356” in the subject line and sign the email with your full name.**

Prerequisite: PSY 250 or BIO 202 or BIO 203

3 credits

COURSE DESCRIPTION: An advanced survey of the neurobiological bases of complex behavior. A review of basic neurophysiology, neuroanatomy, and neurochemistry is followed by considerations of the circuitry and neural processing supporting perception, motion, emotion, sleep, attention, learning, language, and higher cognitive mechanisms.

COURSE LEARNING OBJECTIVES: This course has prerequisites from Study the Natural World and is at a deeper level than introductory versatility courses in Biological/Integrative Neuroscience. The course is designed to satisfy the pursuit of deeper learning in STEM+.

Within the course, students will have the opportunity to explore interconnectedness. Students will compare philosophical explorations about the mind and knowledge acquisition with current understanding of the biological bases of the mind and knowledge acquisition. Students will be exposed to the biological basis of addiction and aggression, and discuss the parallels and contradictions between societal views and the views from science. Students will synthesize empirical results from science with the theoretical arguments

from philosophy and public policy. The course includes topics that facilitate the exploration of the interconnectedness between the sciences and humanities.

PSYCHOLOGY 356, Physiological Psychology

Week	Mo	Date	Topic	Reading
Week 1	August	24	Handout and review syllabus	
		26	Philosophy of the Mind	Chapter 1
		28	Philosophy of the Mind	Supplemental reading on BB
Week 2	Sept	31	Philosophy of the Mind	
		2	Philosophy of the Mind	
		4	Discussion: Free Will	Reading Bechara, Deciding Advantageously
Week 3		7	No Classes-Labor Day	
		9	Exam 1	
		11	Functional Neuroanatomy	Chapter 2
Week 4		14	Functional Neuroanatomy	Chapter 2
		16	Neurophysiology	Chapter 3
		18	Neurophysiology	Chapter 3
Week 5		21	Neurophysiology	Online activity
		23	Neurophysiology	handout and BB
		25	Activity in class	
Week 6		28	Myasthenia Gravis and Multiple Sclerosis	
	Oct Pre-view	30	Neuroanatomy Assignment, no class	
		2	Exam 2 , Covering Chapters 2,3 http://www.charlierose.com/watch/60093461	1 hour
Week 7		4	Chemistry of Behavior	Chapter 4
		5	Chemistry of Behavior	
		7	Video: Walking on All Fours	
		9	Reading	Reading: Ajzensztejn, Stressful

Week 8		12 Chemistry of Behavior	Weight Loss
		14 Hormones	Chapter 4
		16 Hormones	Chapter 5
Week 9		19 Hormones	
		21 Make up day	
		23 Exam 3: Covering Chapters 4,5	
Week 10		26 Evolution	Chapter 6
		28 Evolution	
		30 Evolution	
Week 11	Nov.	2 Lifespan	Chapter 7
		4 Lifespan	
	Pre-view	Parkinson's/Hungtington's Disease	Autism
		http://www.charlierose.com/watch/60085855	http://www.charlierose.com/watch/60073097
		6 Lifespan	
Week 12		9 Exam 4: Covering Chapters 6,7	
	Pre-view	http://www.charlierose.com/watch/50059537	
		11 Emotions	Chapter 15
		13 Emotions	
Week 13		16 Emotions	
		18 Emotions	
		20 Aggression	Reading: Nelson, Trainor, Neural Mechanisms of Aggression
	Pre-view	http://www.charlierose.com/watch/60078944	1 hour
Week 14		23 Psychopathology	Chapter 16
		25 Thanksgiving Break	
		27 Thanksgiving Break	
	Dec	30 Psychopathology	
		2 Psychopathology	
Week 15	4(last day)	Anxiety	Reading: Grupe, Uncertainty and Anticipation in Anxiety

7 Reading day
8-16 Finals week
10(Thur) FINAL EXAM

11:15-1:45 Covering Chapters 15,16

Required Texts:

1) BIOLOGICAL PSYCHOLOGY, Author: BREEDLOVE, Publisher: SINAUER, Edition: 7TH

For each article,
read before class.
Submit a response
on Safe Assign. Be
prepared to
answer a quiz
question, and
discuss the article

Your
summary
should
reflect the
whole
article, not
just one
section.

Additional Readings:

Sept 4 **Bechara, Damasio, Tranel, Damasio, 1997** Deciding Advantageously before knowing the advantageous strategy. Science: 276: 1293-1295.

Oct. 9 **Ajzensztejn, M 2011, Stressful weight loss** Archives Dis Child Educ Pract Ed 96:67-72 (doi:10.1136/adc.2009.172320)

Nov 20 **Nelson, R, Trainor, B. (2007).** Neural Mechanisms of Aggression, 8: 536-546 Nature Reviews: Neuroscience, vol 8, 536-546.

Dec 4

Grupe, DW and Nitschke, JB (2013)

Uncertainty and anticipation in anxiety: An integrated neurobiological and psychological perspective, *Nature Reviews: Neuroscience*, 14: 488-501

For students relatively new to neuroscience and the overall framework, you may find the following videos helpful.

These include discussions of the newest ideas in behavioral, cognitive and clinical neuroscience.

Watch on your own and come to class prepared to discuss

2a MS link specifically found at <http://www.charlierose.com/watch/60093461>

4a Parkinson's and Huntington's disease: <http://www.charlierose.com/watch/60085855>

Or Autism: <http://www.charlierose.com/watch/60073097>

5a Emotional and Vulnerable Brain <http://www.charlierose.com/watch/50059537>

5c Psychopathology Chapter: Depression @ <http://www.charlierose.com/watch/60078944>

Course Policies:

-Attendance is *necessary* for this course. If you cannot attend class *consistently*, it is strongly recommended that you drop the course. In past offerings, exam scores strongly correlated with attendance and participation.

-Recordings will be considered if requested in writing. In the request, please state your understanding that audiotapes are for personal use only, and cannot be widely distributed or copied.

-All materials made available for this course are for your personal use during the semester in which you are enrolled. Materials should not be widely distributed or posted on any public site.

-Power point slides will be based on the textbook material, and therefore lectures will not be posted online. Exams will cover material from the lecture, text and readings.

-I use Blackboard email and announcements to communicate changes in deadlines or exam dates. If you do not have frequent access to email, please let me know how best to reach you. Please make sure that Blackboard has the address for the email account you use most often. I highly recommend you adopt the university email address, or forward the email to that address to your favorite account so that you do not miss important communications.

Exams

Objective: Each exam is designed to test knowledge of material covered in the lecture and text. **Structure of Exams:** Multiple choice. Be aware that some questions include images or graphs that require interpretation. Only material covered since the previous exam is included on the test. The final exam is NOT cumulative.

Exam policies: Exams start at the beginning of class time. No one will be admitted 15 minutes after the exam starts. Everyone is expected to finish by the end of the class period. So that students have adequate time to complete the exam, there will be around 30 questions per exam.

Visit the restroom before the exam, you will not be allowed to visit the restroom during the exam.

Sit spaced apart, with books away neatly.

Baseball or other caps with bills removed. No hoods can be worn during the exam.

If you need to wear a head covering of any sort, please speak to me before the exam.

No food or drinks are allowed in the exam room.

Do not bring headphones to the exam.

Turn off cell phones. Touching your cell phone will be considered an indication that you choose to forfeit the exam.

If you need to know the time, ask the TA or course instructor.

Do not cheat and do not take part in any activity resembling cheating.

Any appearance of cheating, will cause removal of the exam.

Do not speak to friends or classmates during an exam. **Doing so will bring about an automatic F** on the exam.

If you have any needs, you can ask the TA or Instructor rather than a classmate. We will then do our best to help you (such as getting a scantron form, eraser, pen etc.) If you must leave the room once the exam is handed out, you will forfeit your opportunity to take the exam.

Make-up Exams: Each student is permitted to take **one** exam late. *Advanced notice* is required to take advantage of this option (leave a message at 632.7821 or email Brenda.Anderson@stonybrook.edu prior to the exam. In choosing this option, however, the student will automatically lose 5 percentage points. Make up exams will be given at designated times. Students have the responsibility to notify the Course director and TA that they have chosen this option. They must do so in advance of the exam, and confirm their intention to take the exam. In the case of excused exams, students are responsible for producing documentation of the formal excuse. If not, the 5% points will be deducted. Make up exams may be in the form of either short answer or multiple choice. Be forewarned that they may be more difficult.

Make up exam dates.

Exam 1 Make up: Thurs, Sept. 11, 1 pm, contact Akos.Szekely@stonybrook.edu to obtain location

Exam 2 Make up: Tuesday, Oct. 7, 1 pm contact Akos.Szekely@stonybrook.edu to obtain location

Exam 3 Make up: Thursday, Oct. 23, 1pm Akos.Szekely@stonybrook.edu to obtain location

Exam 4 Make up: Tuesday, Nov 11, 1pm Akos.Szekely@stonybrook.edu to obtain location
No make-up exams are possible for the final exam.

Homework/participation points

There will be homework assignments and participation points given.

Assignments will include blackboard assignments to check your understanding, written summaries of the two supplementary readings, in class quizzes, participation points and sign in sheets.

Late assignments will be accepted only at the lecture following the deadline. All late assignments will receive 5% deductions. If you cannot be present the day of the deadline, you can turn your assignment in early to avoid the penalty.

In-Class Activities: We will have unannounced class activities to supplement the lectures. Students are expected to arrive having read the chapter, and prepared to discuss, question or use the information for an activity.

In-class activities provide the opportunity to participate in, and develop skills for solving problems in groups. These activities provide the opportunity to use appropriate social skills required for group cooperation. Each group will be asked to perform a task within class time, and must work quickly. At the end you will be required to present your product to the class or each individual will have to hand in a record of their work. Each student should turn in a 1 paragraph summary of the activity to receive credit.

The number of points earned will be divided by the total number possible, and then multiplied by 12. This number will be the percent added to the percent correct on your lowest exam grade.

Grading: Students must take all exams, including the final exam. Exam grades will be reported as percent correct. Your final grade will be based on the average of those scores with the exception noted above. The lowest exam score will have up to 10% more points added. Additional points are based on the following formula. The percent correct of non-exam points earned divided by 10.

Final scores: Extra credit is built into the course grading so there is no reason to ask for extra assignments later. Participate fully from the beginning of the semester to receive the extra credit.

How it works: A student earns three exams scores. On exam 1, there were 30 questions and the student earned 27 points. $27/30 = 90\%$. Exam 2 $28/32 = 87.5\%$. Exam 3 $24/28 = 86\%$ Exam 4 $28/30 = 93\%$ and exam 5 $23/27 = 85\%$.

For example, if students are given an opportunity to earn 100 extra points, and they earn 90 of the additional points will be calculated at $(90/100)/10$. In this case the 9% extra points will be added to the lowest exam score.

So the exam scores are converted from 90%, 81% and 86% to 90%, 87.5+9%, 86%, 93%, 85% which gives a final average of 90% .

A (90-100), B (80-89.99), C (70-79.99), D (60-69.99), F (59.99 and below).
Single digits and their relation to – or + added to letter grades
00-02 yield a “-“ added to the letter grade
03-06 = straight grade
07-09 = “+” added to the letter grade.

Any need to curve exam scores is addressed at the time individual exams are graded so that students can monitor their grade as the course progresses.

Excuses: For those who would like to bring formal excuses for missing class, especially when activities are missed, the excuses will be filed and taken into consideration when grades are on the border. Likewise, if you have family concerns, emotional problems, and health problems, I will be happy to take these into consideration *if your grade is on the border*. However, it is difficult to use this information for anything other than making borderline grade decisions. In other words, exams cannot be graded more easily because of these concerns. If any such concerns are severe enough, I would recommend the student drop the course or consider taking an incomplete until their situation is resolved. Incompletes must be negotiated with Dr. Anderson. Likewise, if such concerns interfere with a student’s ability to take exams on time and hand in homework on time, the student should provide documentation from a doctor or campus counselor. Students should be aware that in situations that warrant missing all classes for several days because of unexpected emergencies, the student should contact the Dean of Students. He/She can help contact professors, and absences will then be considered excused. For any issues that require absences at critical class times or the inability to hand in homework, the instructor must be notified in a timely manner.

Course resources:

BLACKBOARD: Resources customized for this class can be found at: <https://blackboard.stonybrook.edu> If you have never used Stony Brook's Blackboard system, your initial password is your SOLAR ID# and your username is the same as your Stony Brook (sparky) username, which is generally your first initial and the first 7 letters of your last name. All material available online is for the sole use of students enrolled in the course only during the semester of enrollment. Your respect for these limitations allows faculty to continue to use copyrighted material for the purpose of teaching.

For help with Blackboard or more information see: <http://www.sinc.sunysb.edu/helpdesk/docs/blackboard/bbstudent.php> For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site, you can also call: 631-632-9602 or e-mail: helpme@ic.sunysb.edu This class is an upper division course, and by now all students are expected to know their way around Blackboard course folders. If you are not familiar, log and find your way around our course materials. If you need help, seek help from the SINC site.

Your textbook also comes with study materials available online. See your textbook for more information.

DISABILITY SUPPORT SERVICES (DSS) STATEMENT (must be the following language)

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: <http://www.stonybrook.edu/ehs/fire/disabilities>]

ACADEMIC INTEGRITY STATEMENT (must be the following language as approved by the undergrad council):

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>

CRITICAL INCIDENT MANAGEMENT (must be the following language as approved by the undergrad council):

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

On Blackboard, you will be asked to agree to the following statement:

I have read the syllabus and I understand the grading system. With that in mind, I understand that all students will be graded as fairly as possible. I understand that my grade along with all grades in the course will be based on my test performance, and the quality of my homework, participation in group activities, and attendance. I understand that with fairness in mind, I cannot ask for special consideration when my grade is given. Therefore, I will not ask the instructor to change my grade because of outside circumstances.

Signature: _____ Date: _____

You need to agree to the statement above on your first assignment on BB. By agreeing, you will receive access to the remaining assignments.