

## PORTLAND STATE UNIVERSITY

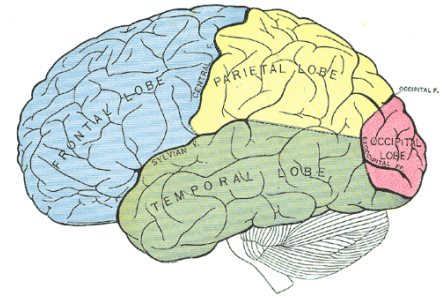
### SPHR 461: Neurology of Speech & Hearing

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**HYBRID COURSE D2L website:** <https://d2l.pdx.edu/>

**Winter term: September 30 – December 13, 2013**

“Live” class meets on FRIDAYS, 2:00 – 3:50pm (Academic/Student Rec Center 230)

GOAL OF THE COURSE: The goal of this class is to introduce you to how the nervous system underlies communication, from how neurons communicate with each other to how they form networks that carry out complex behaviors such as hearing and speech. Topics to be covered include electrical and chemical transmission, the structure and functional divisions of the nervous system, the central auditory system, and brain regions that participate in the production and comprehension of speech and language.

THIS IS A HYBRID COURSE: Half of the coursework is designed to take place online. It is important that you are prepared to utilize the technology that Portland State uses for this course. *Excuses involving technology will NOT be accepted. Make copies of your discussion posts before submitting them. \*\* Students are solely responsible for their own computer access, software and equipment maintenance.*

GRADES: Grades will be assigned on a percentage system. Grades are assigned as follows: 90% and above (A), 80 – 89% (B), 70 – 79% (C) and 60 – 69% (D) scale.

Your understanding of the material is assessed by an online midterm and a “live,” *proctored final exam scheduled during the official PSU final exam week.* Successful completion of four coloring assignments will earn you more course credit. More credit is earned by taking four online quizzes about the material presented during earlier lectures, and by participating in our weekly online Discussion forums...

DISCUSSION FORUMS (20 percent): You are *required* to post TWICE each week to our two online discussion forums. Your first post on each week's topic is always due by late THURSDAY, and your second post is due by late MONDAY (of the following week). ***There is NO credit awarded for late posts, for ANY reason.***

COLORING ASSIGNMENTS (10 percent): Students will complete four coloring assignments, each worth 2.5 points, that require the drawing (and coloring!) of specific nervous system structures. These assignments are available on the course website, *but MUST be turned in during live class sessions*. ***No emailed or late assignments are accepted, for ANY reason.***

QUIZZES (20 percent): Four graded online quizzes will test your knowledge of the material presented during the previous few weeks. The questions are a good guide to the kind of material that will be covered on the midterm and final exam. There are also a few ungraded online "practice" quizzes that you are highly encouraged to take...

MIDTERM EXAM (20 percent): The timed **online midterm** will cover ALL the material presented through Week Five (the neocortex and higher cognitive functions). Questions may also be drawn from the textbook and additional reading assignments.

FINAL EXAM (30 percent): The final exam is comprehensive, but draws more from the lectures and reading assignments available after the midterm exam. ***The final takes place on campus during finals week, and under no circumstances will the date be moved.***

ATTENDANCE: This is a hybrid class, with only ONE "live" class meeting each week. ***Class attendance is HIGHLY recommended.*** Most questions on the quizzes, midterm and final are based on material elaborated on and discussed during the live lectures.

TEXTBOOKS: *Neuroscience: Exploring the Brain*, by Bear, Connors and Paradiso (Lippincott Williams & Wilkins; 3rd edition, ISBN: 978-0781760034), ***required for the course***. Also *THIEME Atlas of Anatomy: Head and Neuroanatomy*, by Michael Schuenke, Erik Schulte, et al; (*Thieme International*, First Edition, 2007; ISBN: 978-1588904416). This atlas is ***recommended, but not required***, for the course.

ADDITIONAL READINGS: *Four additional readings are required, and are available on the course website. These readings are: (1) “Fundamental Feelings,” by Antonio Damasio; (2) “Phantoms in the Brain,” Ch. 6, by V.S. Ramachandran; (3) “Aphasia and the Neural Basis of Language,” by Antonio R. Damasio and Hanna Damasio; and (4) “A Personal Case History of Transient Anomia,” by Mark H. Ashcraft.*

OVERHEADS: Overheads used in the course are available at our course D2L site.

GRADUATE STUDENT PRESENTATIONS (15 percent\*): Students taking the course for graduate credit will prepare a 10 minute **online** video about a communicative disorder. Students should cover the nature of the disorder, the neurological basis for the disorder, and the various treatment options or therapies used to treat it. This video is DUE the last week of class (Week Ten). *If you are enrolled in SPHR 561, you MUST complete this requirement. \*NOTE: Grad students will be assessed out of 115 “points,” with percentages in each category first converted to points: i.e., points earned/115 = grade/100.*

**\*\*\* PLEASE NOTE: Each week you are expected to...**

1. READ an online lecture, textbook, and (sometimes) other readings
2. PRINT out a series of course overheads
3. WATCH a series of online video lectures
4. POST to TWO SEPARATE discussion forums. Your first post is DUE by late Thursday night, and your second post is due by late Monday of the following week. Our "live" class is scheduled on FRIDAYS (right in the middle!)
5. SOMETIMES...TAKE a quiz. Some of these quizzes are ungraded practice quizzes, that you can take again and again, but several of them are GRADED. Graded quizzes can only be taken ONCE...

Note that there are weekly TA discussion forums, where you can post specific questions or concerns for our course TAs...Welcome to the course & Cheers!

**ACADEMIC CALENDAR****1. Introduction to the nervous system**

Divisions of the nervous system, localization versus holism, neurons and glia  
(LIVE CLASS: Friday, October 4<sup>th</sup>)

## READINGS:

- a. Neuroscience (Bear), Ch. 1 (p. 4 – 21), Ch. 2 (p. 24 – 49)
- b. Thieme atlas, p. 172, 316 – 325

ONLINE PRACTICE QUIZ ONE (P1): *not graded*

**2. The neuron: The basic structural unit of the nervous system**

Electrical properties of neurons; how neurons carry information-rich electrical messages (the resting potential and action potential)  
(LIVE CLASS: Friday, October 11<sup>th</sup>)

## READINGS:

- a. Neuroscience (Bear), Ch. 3 (p. 52 – 73), Ch. 4 (p. 76 – 100)
- b. Thieme atlas, p. 174 - 176

**COLORING ASSIGNMENT #1 DUE IN CLASS ON FRIDAY**

**ONLINE GRADED QUIZ ONE (Q1)**

**3. The synapse: How neurons link up to form networks**

Chemical transmission, and neuropharmacology (the chemicals, or neurotransmitters, involved)  
(LIVE CLASS: Friday, October 18<sup>th</sup>)

## READINGS

- a. Neuroscience (Bear), Ch. 5 (p. 102 – 121), Ch. 6 (134 – 166)

ONLINE PRACTICE QUIZ TWO (P2): *not graded*

**4. Basic brain organization: Introduction to large scale neural networks**

Directional terms, brainstem, thalamus, basal ganglia, limbic system, cerebellum, spinal cord afferent and efferent tracts  
(LIVE CLASS: Friday, October 25<sup>th</sup>)

## READINGS

- a. Neuroscience (Bear), Ch. 7 (p. 168 – 178), Ch. 14 (459 – 465)
- b. Thieme atlas, p. 185, 216, 206 – 209, 220 – 223, 230 – 232

**ONLINE GRADED QUIZ TWO (Q2)**

**5. The neocortex and higher cognitive functions**

Anatomy of cortex, sulci, gyri, fissures, lobes, paleocortex versus neocortex, and the functional significance of layers and neocortical columns  
(LIVE CLASS: Friday, November 1<sup>st</sup>)

READINGS

- a. Neuroscience (Bear), Ch. 7 (p. 192 – 199)
- b. Thieme atlas, p. 200 - 207

**COLORING ASSIGNMENT #2 DUE IN CLASS ON FRIDAY**

**ONLINE MIDTERM EXAM**

**6. Spinal nerves and cranial nerves**

Olfactory, Optic, Oculomotor, Trochlear, Trigeminal, Abducens, Facial, Vestibulocochlear, Glossopharyngeal, Vagus, Accessory, Hypoglossal  
(LIVE CLASS: Friday, November 8<sup>th</sup>)

READINGS:

- a. Neuroscience (Bear), Ch. 7 (p. 226 – 229, 232 - 233)
- b. Thieme atlas, p. 66 – 91, 266 – 285

ONLINE PRACTICE QUIZ THREE (P3): *not graded*

**7. Special topics in communication: Emotion and feeling**

(LIVE CLASS: Friday, November 15<sup>th</sup>)

READINGS

- a. Neuroscience (Bear), Ch. 18 (p. 564 – 583)
- b. Antonio Damasio, “Fundamental Feelings”

**ONLINE GRADED QUIZ THREE (Q3)**

**8. Special topics in communication: Attention and neglect**

(LIVE CLASS: Friday, November 22<sup>nd</sup>)

READINGS

- a. Neuroscience (Bear), Ch. 21 (p. 644 – 659)

- b. V.S. Ramachandran, "Phantoms in the Brain," Ch. 6

**COLORING ASSIGNMENT #3 DUE IN CLASS ON FRIDAY**

ONLINE PRACTICE QUIZ FOUR (P4): *not graded*

**9. The auditory system**

(\*\* HAPPY THANKSGIVING!!: NO LIVE CLASS THIS WEEK \*\*)

READINGS

- a. Neuroscience (Bear), Ch. 11 (p. 344 – 375)

**ONLINE GRADED QUIZ FOUR (Q4)**

**10. Cortical localization of language function**

Comprehension and expression; expanded networks  
(LIVE CLASS: Friday, December 6<sup>th</sup>)

READINGS

- a. Neuroscience (Bear), Ch. 20 (p. 618 – 647)  
b. Antonio Damasio, "Aphasia and the neural basis of language"  
c. Mark Ashcraft, "A personal case history of transient anomia"

**COLORING ASSIGNMENT #4 DUE IN CLASS ON FRIDAY**

**FINAL EXAM:**

**\*\*\*\* THIS IS A "LIVE" ON CAMPUS FINAL EXAM \*\*\*\***

**FRIDAY, DECEMBER 13<sup>th</sup>, from 10:15 – 12:15pm**

**\*\*\*\* FINAL EXAMS ARE NOT MOVED FOR ANY REASON**

**EXCUSES:** Life has ups and downs, and everyone struggles sometimes with family, work, and other personal concerns and commitments. However, unless there is a serious, unexpected, sudden, and significant emergency, *please do not petition for special treatment regarding deadlines for posts, quizzes, or exams.* I am required to treat all students fairly, and that means each of you must think ahead and plan for when assignments are due. Remember that everyone is subject to the same course expectations, and rules...