

# HESP 422: Neurological Bases of Human Communication

## Department of Hearing and Speech Sciences

### Syllabus

**Instructor:** Melissa Stockbridge, Room 0141BB Lefrak

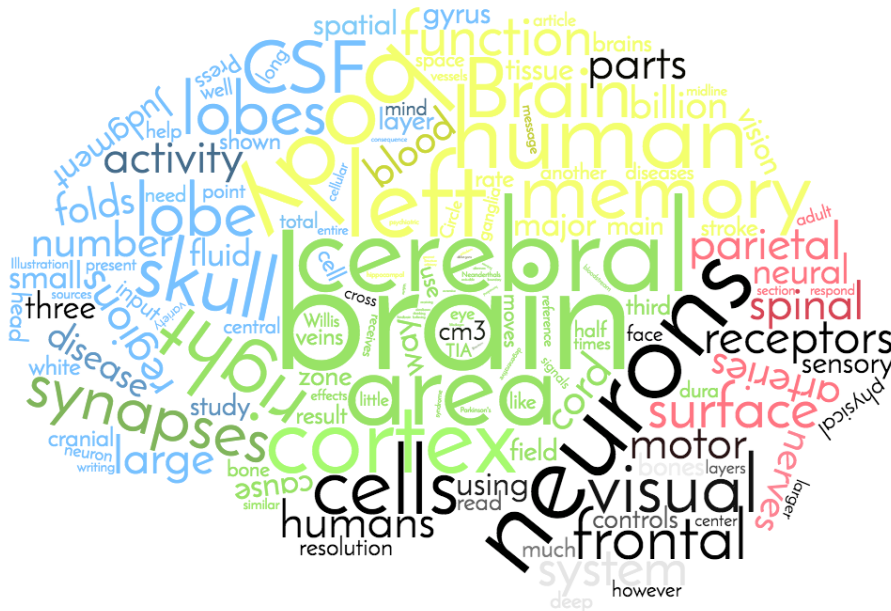
**Email:** mdstock@umd.edu

**Class time:** Tuesday & Thursday 2:00pm - 3:15pm

**Place:** JMZ 0105

**Office Hours:** Lefrak 0141BB, By appointment

**Prerequisite:** HESP305 and permission of department



This course will cover basic structure and function of the brain as it pertains to substrates of speech, language, and hearing.

**Textbook (required):** Pinel, J. P. (2007). *A colorful introduction to the anatomy of the human brain: A brain and psychology coloring book*. (2nd ed.) Allyn & Bacon.  
ISBN-13: 978-0205548743

#### ASHA Standard & Course Learning Outcomes and Goals:

**Standard III-C:** Students will demonstrate knowledge and basic human communication and swallowing processes, including their biological, neurological, acoustic, psychological, developmental, and linguistic cultural bases by:

1. Demonstrating the ability to analyze, synthesize, and evaluate information in the areas of basic human communication processes.
2. Specifying the anatomical characteristics and structures of the central nervous system, including the cerebrum, cerebellum, brainstem, spinal cord, diencephalon, and basal ganglia.
3. Summarizing the anatomical characteristics and structures of the peripheral nervous system, including the spinal nerves, the cranial nerves, and the autonomic nervous system.

4. Explaining the blood supply to the brain.
5. Summarizing how cerebrospinal fluid circulates throughout the brain
6. Relating neurophysiologic processes to the production of typical communication and communication associated with progressive disease processes.

**Standard III-D: Specifying etiologies and characteristics of neurologically-base-acquired language, speech, reading, writing, and cognitive disorders by:**

1. Demonstrating the understanding of neurological basis of cognitive aspects of communication, including memory, learning, sequencing, problem-solving, and executive functioning.
2. Specifying knowledge of hearing, including the impact on speech and language.

**Course Objectives:**

At the end of this course, you should be able to demonstrate an appropriate introductory understanding of:

1. The cellular and molecular properties of the brain and how they develop
2. Key structures and landmarks of the brain and peripheral nervous system
3. Various ways the brain represents the outside world, including the visual system, auditory system, and somatosensory system
4. Ways the brain directs and regulates automatic, gross, and fine motor movement
5. The origins and present understanding of higher order processes for language, planning, critical thinking, and reasoning
6. The origins and present understanding of the impacts of injuries to the brain

**Schedule of classes:**

Week	Date	Topic	Homework
1	1/26	Introduction to the course and materials	
2	1/31	Orienting to anatomy	Singh et al., 2007 Coloring: 1.1-1.2, 2.1-2.3
	2/2	Cell structures	Coloring: 3.1-3.4
3	2/7	Cellular communication	Coloring: 3.5-3.8
	2/9	Early development	Coloring: 4.1-4.5
4	2/14	Gross brain anatomy	Coloring: 5.1-5.4
	2/16	Cerebral hemispheres	Coloring: 7.1-7.4
5	2/21	<b>Quiz 1</b>	
	2/23	Cortex & subcortex	Coloring: 7.5-7.8, 4.6
6	2/28	Visual system	Coloring: 8.1-8.2
	3/2	Auditory system	Coloring: 8.3-8.4

7	3/7	Memory	Coloring: 10.1-10.5
	3/9	Language	Coloring: 12.1-12.3
8	3/14	Language II	Hagoort et al., 2013
	3/16	<b>Quiz 2 &amp; Project topic due</b>	
9	<b>Spring Break! No class 3/21 or 3/23</b>		
10	3/28	Reptilian brain & spinal cord	Coloring: 6.1-6.3
	3/30	<b>NO CLASS</b>	<b>NO CLASS</b>
11	4/4	Cranial nerves	Coloring: 1.3-1.6, 5.7
	4/6	Diencephalon	Coloring: 6.4-6.6
12	4/11	Bodily messenger systems	Coloring: 5.5, 5.6
	4/13	Somatosensory system	Coloring: 8.5-8.7
13	4/18	Motor system	Coloring: 9.1-9.4
	4/20	Motor patterns	Coloring: 9.5-9.6
14	4/25	<b>Quiz 3</b>	
	4/27	Motivation	Coloring: 11.1-11.7
15	5/2	Critical thinking	Coloring: 12.4
	5/4	Social thinking	Coloring: 12.5
16	5/9	<b>Presentations</b>	
	5/11	<b>Presentations</b>	
17	5/17 FINAL	<b>Quiz 4 &amp; Final paper due</b>	Time: 10:30 am – 12:30 pm

**Information related to homework, announcements, and assignments may be found on ELMS, <https://umd.instructure.com/courses/1220223>.**

**Homework:** Assignments will vary and include coloring book pages, handouts, online assignments, and other readings. Assignments may be changed at the end of classes based on progress. Assignments are due at the start of the following class from when they are listed. Homework completion will be checked and counted toward participation for the day it is due.

**Assignments:** All assignments should be typed, printed, stapled, and submitted at the beginning of class, unless otherwise stated. All original written work should include content and citations that conform to American Psychological Association style guidelines, which may be found here

<https://owl.english.purdue.edu/owl/resource/560/01/>. ALL SOURCES with the exception of content retrieved from your textbook or lectures MUST BE CITED.

Except where required due to excused absence, late assignments will not be accepted.

**Grading:**

Quizzes (4):	60%
Final project:	25%
Participation & Homework:	15%

**Expectations:**

**You are expected to come to class each day prepared to actively engage in discussion and other activities.**

*Contact:* Please contact me by email regarding absences, to discuss DSS accommodations, to schedule meetings, or to ask questions. My email address is [mdstock@umd.edu](mailto:mdstock@umd.edu). In the event of inclement weather, school closing, or extended emergency closure, class content will be transitioned to an online format, with additional details provided by email.

*Laptops:* While relevant laptop use in the classroom is permitted and expected for in-class activities, it is discouraged for note-taking. **Laptop note-taking promotes transcription over processing the information, which is detrimental to your learning** (Mueller & Oppenheimer, 2014)! The instructor reserves the right to revoke this permission on an individual or group basis at her discretion.

*Collaboration:* In class and outside of class, you will be participating in many activities in collaboration with your peers. When working in groups, all group members should be listed on any assignment/deliverable. All listed members should make a substantial material contribution to the work if their name appears. Students are encouraged to plan each group member's contribution upfront and describe the nature of each group member's contribution appended to any major assignment/deliverable. Failure to disclose additional assistance received or additional peer participation, as well as failure to participate and engage fully in group efforts where one is credited both will be viewed as academic dishonesty.

**Policies relevant to Undergraduate Courses are found here:**

**<http://ugst.umd.edu/courserelatedpolicies.html>.**

Topics that are addressed in these various policies include academic integrity, student and instructor conduct, accessibility and accommodations, attendance and excused absences, grades and appeals, copyright and intellectual property.

**You are responsible for independently reviewing and upholding these policies during this course.**