ComSDis 220: Anatomy and Physiology of the Speech, Hearing and Language Mechanism (U, 4 credits)

Summer 2022

COURSE SYLLABUS

Instructor: Sabine Heuer, PhD CCC-SLP E-mail: heuer@uwm.edu
Office: via Teams
Office hours: by appointment

COURSE DESCRIPTION: Structures and functions involved in normal speech and language. Prereq: Bio Sci 202 (P) or cons instr.
This class is one of three courses required for admission into the Communication Sciences and Disorders major (students need a cumulative B average in the three core courses to be admitted into the major).

REQUIRED TEXT:
Seikel, J.A., King, D. & Drumright, D.G. (2018). Anatomy and Physiology for Speech, Language and Hearing (6th edition). Clifton Park, NY: Delmar, Cengage Learning.

NOTE: This class has a Canvas website. Please access it for course lecture notes, lab assignments, quizzes and other resource materials.

REQUIRED ADDITIONAL MATERIALS: For the lab assignments you will be asked to create anatomical models of the blood supply of the brain (the Circle of Willis) and a larynx. You will need some pipe cleaners and sticky notes for the Circle of Willis. You will need "Sculpey" or "Femo" or any other type of polymer clay in four different colors for the anatomical model of the larynx.

LEARNING OUTCOMES ASSOCIATED WITH THIS COURSE:
Standard III-B. 1.A.

1. The student will demonstrate the ability to apply basic anatomical and physiological concepts relating to the respiratory system to normal aspects of phonation and speech.
2. The students will demonstrate the ability to apply basic anatomical and physiological concepts relating to the phonatory system to normal aspects of phonation and speech.
3. The student will demonstrate the ability to apply basic anatomical and physiological concepts relating to the articulatory system to normal aspects of speech.

Standard III-B, 1.B.

1. The student will explain neuroscience fundamentals related to the central and peripheral nervous system.
2. The student will explain concisely a structural overview of the nervous system relevant to basic human communication processes.
3. The student will explain concisely a functional overview of the nervous systems relevant to basic human communication processes.

COURSE OUTLINE:

Week	Topic	Readings	Assignments
	Unit I: Functional Neuroanatomy		
6/1	Basic elements of anatomy	pp. 3-10	
	Nervous tissue	p. 16	
	Divisions of the nervous system	pp. 607-610	
	Structure of neurons	pp. 612-619	
	Overview of the brain	p. 621	
	The meninges	pp. 621-628	
	Cerebrospinal fluid and the ventricles	pp. 629-632	worksheet # 1 (due on 6/5)
6/7	The cerebrum: topography, divisions,	pp. 632-652	Quiz # 1 (due 6/6)
	landmarks, pathways	pp. 654-663	
	Subcortical structures		worksheet # 2 (due 6/10)
6/14	The cerebrovascular system	pp. 663-667	Quiz # 2 (due 6/13)
	The cerebellum	pp. 667-673	
	The brainstem	pp.673-685	
	The cranial nerves	pp. 686-711	
	The spinal cord and spinal nerves	pp. 711-719	worksheet # 3 (due 6/17)
	Unit II: Functional Anatomy and Physiology of Respiration		
6/21	Intro to respiration:	pp. 47-48	Quiz # 3 (due 6/20) Lab 1 (due 6/22)
	Upper airway		
	Larynx		
	Lower airway	p. 71-87	
	The pleura	p. 88-93	
	Boyle's Law – the mechanics of respiration	pp. 47-49	
	Skeletal framework for respiration: the vertebral column	pp. 50-61	worksheet # 4 (due 6/24)
6/28	Skeletal framework of respiration: pelvis, pectoral girdle, rib cage	pp. 62-71	Quiz # 4 (due 6/27)
	Muscles of Inspiration: Diaphragm	pp.93-100	
	Anterior Thorax	p. 102-105	
	Posterior Thorax	p. 106-110	
	Neck	p. 110-114	
	Upper Arm	p. 114-116	
	Stabilizers of the scapulae	p. 116-119	worksheet # 5 (due 7/1)
7/5	Muscles of expiration Anterior Thorax	p.120-124	Quiz # 5 (due 7/5)
	Non-muscular portion of the abdominal wall	p. 127-128	

	Abdomen	p. 128-130	
	Respiratory Physiology: passive factors of respiration		
	Respiratory cycle: quiet tidal breathing	p. 145-146	
	Volumes and capacity	p. 150	
	Pressures of the respiratory system	p. 153-160	
	Breathing for speech	p. 160-171	worksheet # 6 (due 7/8)
Unit III: Functional Anatomy and Physiology of Phonation			
7/12	Intro to phonation	p. 185	Quiz # 6 (due 7/11)
	Framework of the larynx	p. 185-190, 203-211	
	Laryngeal membranes and cavities	p. 190-200	
	Intrinsic laryngeal muscles	p. 212-225	worksheet # 7 (due 7/15)
7/19	Extrinsic laryngeal muscles	p. 225-238	Quiz # 7 (due 7/18)
	Laryngeal movements and innervation	p. 206-208; 219-222,	worksheet # 8 (due 7/22)
7/26	Phonatory Physiology		Quiz # 8 (due 7/25)
	Non-speech function	p. 247-249	
	Vocal fold vibration	p. 251-258	
	Attack, termination& sustained phonation	p. 263-267	
	Vocal registers	p. 267-271	
	Pitch and pitch-changing mechanisms	p. 276-281	
	Intensity and intensity changes	p. 281-285	worksheet # 9 (due 7/29)
Unit IV: Functional Anatomy and Physiology of Articulation and Resonance			
8/2	Intro to articulation	p. 305-309	Quiz # 9 (due 8/1) Lab 2 (due 8/3)
	Skeletal framework for articulation	p. 309-346	
	Cavities of the vocal tract	p. 359-366	
	Dentition	p. 346-359	worksheet # 10 (due 8/5)
8/9	Muscles of the tongue	p.376-385	Quiz # 10 (due 8/8)
	Tongue functions	p. 422-425	
	Muscles of the jar	p. 385-391	worksheet # 11 (due 8/12)
8/16	Jaw Function	p. 421-426	Quiz # 11 (due 8/15)
	Muscles of the palate and pharynx	p. 391-401	
	Muscles of the face	p. 366-376	worksheet # 12 (**due 8/18**)
			Quiz # 12 **(due 8/19)**

COMMUNICATION

Please communicate proactively with me via email. In addition, I will offer weekly office hours on Thursday at 10 AM (CT). I will be available for an hour for video conference calls. Please let me know 24 h ahead of time whether you would like an individual video conference meeting to discuss any issues regarding this course.

ASSIGNMENTS AND COURSE REQUIREMENTS

An automatic deduction of 5% of your grade per day will be applied to each assignment (worksheets, quizzes and labs) that is submitted late. If you need to make arrangements, contact me prior to the assignment deadlines in order to avoid a late penalty. All assignments (worksheets, quizzes and labs) need to be attempted. Not completing any one assignment will result in a final grade of F.

1. QUIZZES: There will be 12 weekly quizzes (multiple-choice, short-answer and/or fill-in-the blank questions) to be completed on the Canvas course site, each worth 14 points, based on the lecture and reading material from previous weeks' lectures. ***All quizzes are due on the Monday following the weekly unit at midnight (central time).*** You will have 15 minutes to complete each quiz. If you miss a quiz and have not previously arranged for accommodation, you will receive a score of zero for that quiz. If some emergency prevents you from taking the quiz, let the instructor know as soon as possible. You can drop your lowest ONE quiz score.

2. LABS: The purpose of the two laboratory assignments is to facilitate hands-on learning through creating anatomical models. For your first lab assignment, you will be asked to create a Circle of Willis made of pipe cleaners. For the second model, you will create a model of the larynx made from clay. Thus you will need some extra materials (pipe cleaners for the first project and polymer clay for the second project). ***Students are responsible for completing the lab assignments by Wednesday (6.22) and (8.3).***

3. WEEKLY WORKSHEETS: The purpose of these worksheets is for you to 1) review and synthesize weekly learning materials and 2) assess which content areas need more reviewing, There will be 12 worksheets in total, each is worth 25 points. ***Weekly worksheets are due on Friday at midnight (central time), of the weekly unit.***

GRADING:

Quizzes (11 @ 14 pts each)	154	30 %
Labs (20 and 44 pts)	64	12 %
Weekly worksheets (12 @ 25 pts each)	300	58 %
Total	**518**	

A:	93% and above	C:	73% - 76.99%
A-:	90% - 92.99%	C-:	70% - 72.99%
B+:	87% - 89.99%	D+:	67% - 69.99%
B:	83% - 86.99%	D:	63% - 66.99%
B-:	80% - 82.99%	D-:	60% - 62.99%
C+:	77% - 79.99%	F:	below 60%

ACADEMIC POLICIES

Credit Hour Policy. UWM has a credit hour policy. This document identifies the time students need to invest in a course to be successful. A general rule is 1 credit hour = 3-5 hours of work per week in a16-week semester. Thus, students should anticipate devoting no less than 192 hours of time over the entire semester. **During a more compressed summer term of 12 weeks, you should anticipate to invest 16 hours per week to reviewing course content, completing the readings and assignments, and studying for quizzes.**

Incomplete Work Policy. A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a passing grade for a significant part of the course but, because of illness or other unusual and substantiated causes beyond the student's control, has been unable to take or complete the final examination or some other limited amount of term work. An incomplete is not assigned on the basis of poor academic performance.

Department Policies. For academic appeals procedures please consult https://uwm.edu/healthsciences/students/academic-appeals-procedures/. For specific departmental procedure, a copy of the Department of Communication Sciences and Disorders Graduate Appeals Procedure is available at the main office END 865.

University Policies. The following link to the Secretary of the University Web site contains University policies: http://www4.uwm.edu/secu/SyllabusLinks.pdf

Accommodations for Students with Disabilities The University of Wisconsin Milwaukee supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the Accessibility Resource Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

Academic Integrity

Academic Misconduct: UWM expects each student to be honest in academic performance. Failure to do so may result in discipline under rules published by the Board of Regents (UWS 14). The most common forms of academic dishonesty are cheating and plagiarism.

Cheating includes:

- Submitting material that is not yours as part of your course performance, such as copying from another student's exam, allowing a student to copy from your exam; or,

- Using information or devices that are not allowed by the faculty; such as using formulas or data from a computer program, or using unauthorized materials for a take-home exam; or,
- Obtaining and using unauthorized material, such as a copy of an examination before it is given; or,
- Fabricating information, such as data for a lab report; or,
- Violating procedures prescribed to protect the integrity of an assignment, test, or other evaluation; or,
- Collaborating with others on assignments without the faculty's consent; or;
- Cooperating with or helping another student to cheat; or,
- Other forms of dishonest behavior, such as having another person take an examination in your place; or, altering exam answers and requesting the exam be regraded; or, communicating with any person during an exam, other than the exam proctor or faculty.

Plagiarism includes:

- Directly quoting the words of others without using quotation marks or indented format to identify them; or,
- Using sources of information (published or unpublished) without identifying them; or,
- Paraphrasing materials or ideas of others without identifying the sources.

If a student is charged with academic misconduct, there are specific procedures, including the right of appeal, which must be followed by UWM. Sanctions imposed by the university in response to academic misconduct range from reprimands to expulsion. For more information, look at the student handbook located at https://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/. *The College of Health Sciences Honor Code* provides a framework for moral, ethical, and professional behavior for all members of the College of Health Sciences , including students, faculty, and staff. All members of the CHS abide tenets that support the mission of the College of Health Sciences to prepare future health professionals, and conduct nationally recognized research in the health sciences. The CHS Honor Code can be located online at https://uwm.edu/healthsciences/students/honor-code/.