



SPPA280-001

Anatomy & Physiology of Speech & Hearing

Fall 2016

BULLETIN COURSE DESCRIPTION

The study of the anatomy and physiology of respiration, hearing, phonation, articulation, and the central nervous system. Students participate in a gross-anatomy human cadaver lab.

Tammy Shilling, M.A. CCC-SLP
Associate Clinical Professor of Speech-Language
Pathology

ANDREWS UNIVERSITY
DEPARTMENT OF SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

COURSE: ANATOMY & PHYSIOLOGY OF SPEECH & HEARING
SPPA 280 4 Credits
Fall 2016 MWF 8:30 – 9:20 a. m.
Bell Hall 183

Lab: Tuesdays 3:30 – 5:30 p. m.
Physical Therapy Bldg. Anatomy Lab

INSTRUCTOR: Tammy Shilling, M.A. CCC-SLP
Associate Clinical Professor of Speech-Language Pathology
Bell Hall Suite 114 (office hours will be posted)
Office: 269-471-3451
Cell: 352-206-0309
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REQUIRED TEXTS: Seikel, J. A. (2015) Anatomy & Physiology for Speech, Language and Hearing 5th
Eds
Clifton Park, NY: Delmar Learning

Zemlin, E. & Zemlin W. R. (1997). Speech and Hearing Science Workbook
Champaign, IL: Stripes Publishing. ISBN 9780875637303

OPTIONAL TEXT: McFarland, D. (2014). Netter's Atlas of Anatomy for Speech, Swallowing, and
Hearing.
2nd Ed. Philadelphia, PA: Elsevier Publishing.

For ISBN and price information, please see the listing at the Bookstore
www.andrews.edu/bookstore.”

COURSE

DESCRIPTION: A survey of the anatomy and physiology for articulation, respiration, and hearing.
Areas of study will include skeletal structures, muscles, tendons, nerves, and
circulation necessary for speech and hearing.



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COURSE

OBJECTIVES:

At the conclusion of this course, students will demonstrate an ability to:

- Identify anatomical structures necessary for respiration, phonation, articulation, and hearing. (III - B, III - C, III - D)
- Discuss the mechanics of respiration, phonation, articulation, and hearing including the nerves and muscles involved. (III - B, III - C, III - D)
- Explain how the anatomical structures function together to produce speech and hearing. (III - B, III - C, III - D)
- Demonstrate Professional social skills through class participation and course requirements and activities.

ASHA Standards for Certification in Speech-Language Pathology and Audiology – Learning Outcomes

- Standard III-B. Demonstrate knowledge of basic human communication and swallowing processes, including their biological, neurological, acoustic, psychological, developmental, and linguistic and cultural bases.
- Standard III-C. Demonstrate knowledge of the nature of speech, language, hearing, and communication disorders and differences and swallowing disorders, including their etiologies, characteristics, anatomical/physical, acoustic, psychological, developmental, and linguistic and cultural correlates.
- Standards III-D. Possess knowledge of the principles and methods of prevention, assessment, and intervention for people with communication and swallowing disorders, including consideration of anatomical/physiological, psychological, developmental, and linguistic and cultural correlates of the disorders.

Indicators of Learning: *Student will score average of at least 83.5% on all class assignments, tests, class participation rubrics and presentations.*

COURSE REQUIREMENTS:

1. **Class Attendance:** Attendance and prompt arrival to class is vitally important to the classroom community and atmosphere. As per university policy absences in excess of 20% of the total course appointments may result in a failing grade. Absences recorded because of late registration, suspension, and early/late vacation leaves are not excused. If a student is absent for any reason it is that student's responsibility to arrange to receive handouts, lecture notes, or any other materials missed. Prolonged illness with a physician's explanation will be addressed on an individual basis. Three tardies are equal to one absence.
2. **Quizzes:** There will be in-class quizzes each day that will review material reviewed. They will be worth 5 points. If you are not present in class, you will not receive the points. There are no "make-up quizzes" in this class.

3. **Examinations:** There will be four examinations throughout the semester worth 60-90 points each. All examinations will remain in the possession of the instructor. After exams have been graded they will be distributed for student review. They must be returned to the instructor to be recorded. Exams missed due to an excused absence may be made up within three days of the original administration of the exam. Arrangements must be made prior to the day of the exam. If an examination is missed it can only be made up with an official medical note.
4. **Laboratory Assignments:** There will be scheduled labs every week. Prompt arrival, active participation during the entire lab period, and completion of the lab exit quiz will be worth 10 points per lab period.
5. **Laboratory Exams:** There will be two Laboratory Exams throughout the semester worth 50-60 points each. All examinations will remain in the possession of the instructor. After exams have been graded they will be distributed for student review. They must be returned to the instructor to be recorded. Laboratory exams cannot be made up due to the format of the examination.
6. **Anatomy Workbooks:** Students are required to complete the sections of the workbook corresponding to materials covered in class. Workbooks should be turned in for grading at the time of each **LAB** examination. Each time the workbook is turned in for grading, it is worth a total of 50 points.
7. **Projects:** There will be a total of 5 “systems” projects throughout the course of the semester. (25 points each)
You may choose one of the following for each of the Body systems that are covered in this course:
 - Develop a “study/learning” tool for classmates that would include at least 3 of the following: diagrams to label (with the answer key), mnemonics or ways to remember information, self-quiz, flash cards, etc.
 - Provide study chapter notes that cover both the anatomy and physiology of the system
 - Develop an interactive power point slide show covering the anatomy and physiology of the system
 - Create a visual (poster, 3-D image, model) that represents the anatomy and physiology of the system
 - Create a youtube video using models and diagrams to teach the anatomy and physiology of the system (max 10 minutes).
 - Write a 3 page paper using at least 2 outside resources (other than your textbook) that covers disorders related to the anatomy and physiology of this system that would be important to the Speech language pathology and audiology field.
 - The Professor is open to other project ideas, if you would like to submit for approval
8. **Anatomy Zone Tutorial Videos:** It is highly recommended that you use a free resource for 3D tutorial videos as another learning tool for the anatomy and physiology that we learn in this course. You can register online at anatomyzone.com for free access to all of their tutorial videos. I have listed the videos below in the “assignment” box of the course schedule below so that it corresponds to the readings in the chapter and the lectures. Don’t miss out on this free resource!

9. Additional assignments will be assigned as deemed appropriate by the professor(s).

COURSE POLICIES

- **Academic Integrity:** University learning thrives on the rigor of individual investigation, the authentic exchange of ideas, and a corporate commitment to integrity and mutual respect. University learning requires all members of the academic community to behave honestly. Andrews University anchors its practices in the teachings of the bible as well as in widely established and honorable academic traditions. As the apostle Paul calls us to authenticity in our Christian walk, so the educational institution demands of its participant's true and accurate self-representation. In Ephesians, Paul invites believers "to be renewed in the spirit of your minds, and to clothe yourselves with the new self, created according to the likeness of god in true righteousness and holiness" (Eph. 4:23-24, NRSV). As scholars and as Christ servants, we build His living body through our honesty in all things, both small and great. To that end, Andrews University's faculty and students pledge to learn and grow together, committing to the following Standards and affirming honesty as a core component of an Andrews University education.
- **Cell phones:** All cell phones are to be turned off during class time. Ringing and/or vibrating cell phones are a distraction to the students as well as to the instructor. **This will not be tolerated and students who are unable to adhere to this rule will be asked to leave the class and meet with the Dean to gain reentry to the class.**
- **Disability Information:** If you qualify for accommodations under the American Disabilities act, please contact Student Success in Nethery Hall 100 (disabilities@andrews.edu or 269-471-6096) as soon as possible so that accommodations can be arranged.
- **Emergency Protocol:** Andrews University takes the safety of its student seriously. Signs identifying emergency protocol are posted throughout buildings. Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting that specific location. It is important that you follow these instructions and stay with your instructor during any evacuation or sheltering emergency.
- **Student Responsibility:** E-mail is the official form of communication at Andrews University. Students are responsible for checking their Andrews University e-mail, Moodle/learning hub, and iVue alerts regularly.
- **Changes:** For the purpose of an enhanced learning experience for the students some assignments, quizzes, tests and projects may be changed or altered at the discretion of the instructor. Likewise, the class schedule is tentative and subject to change.
- **All assignments are due at the beginning of class.** After that time a daily deduction of 5% will be applied to the final of the assignment. After 3 days (72 hours) the assignment will no longer be accepted.

GRADES:

Grades are based on the following:

1. Exams (including lab examinations) - 35%
2. Quizzes - 10%
3. Projects - 30%
4. Lab Assignments and Workbook-25%

Grading Scale:

A	94.0 - 100.0%
A-	90.0 - 93.99%
B+	87.5 - 89.99%
B	83.5 - 87.49%
B-	80.0 - 83.49%
C+	77.5 - 79.99%
C	73.5 - 77.99%
C-	70.0 - 73.49%
D	65.0 - 69.99%
F	Below 65%

Tentative Schedule

The instructor reserves the right to modify, eliminate or augment any or all portions of the schedule with reasonable prior notice to students.

- *Week of Spiritual Emphasis - Classes from 8:00 - 8:50 a. m.

Date		Class Topic	Assignments	AZ videos
August	22	Review Syllabus/Bones of Skull (p. 306-341)		Sutures of skull Facial bones Skull
	24	Anatomy Terminology- Chapter 1		Anatomy Terminology
	26	Cranial Nerves - Chapter 11 (p. 652-675)		Cranial Nerves
	29	Outer Ear- Chapter 9/10 (p. 499-505, 531-534)		



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	31	Middle Ear - Chapter 9/10 (p. 505-513, 534-535)		
September	2	Inner Ear - Chapter 9/10 (p. 513-525)		
	5	LABOR DAY- NO SCHOOL		
	7	Inner ear- Chapter 9/10 (p. 535-555)		
	9	Auditory Nerve Pathway- Chapter 10 (p. 555-569)	Project Due	
	*12	Neurons and Nervous Systems- Chapter 11/12 (p. 588-597, 705-717)		Neuron structure Neuron classification Synapse anatomy
	*14	Cerebrum - Chapter 11/12 (p. 598-614, 717-728)		Brain anatomy (part 1, 2)
	*16	Cerebrum and lobes - Chapter 11/12 (p. 615-619, 729-741)		Glial cells
	19	Subcortex- Chapter 11/12 (p.619-630, 741-743)		
	21	Cerebrovascular System - Chapter 11/12 (p. 630-634, 743-751)		Circle of Willis
	23	Cerebellum and Brainstem- Chapter 11/12 (p. 634-652, 752-753)		
	26	Spinal Cord, CNS, PNS- Chapter 11/12 (p. 675-691, 717-728)	Project Due	Divisions of Nervous System Spinal cord
	28	Examination #1		
	30	Vocal Tract- Chapters 6/7 (p. 299-305, 355-361, 411-416)		
October	3	Muscles of the Face- Chapters 6/7 (p. 361-370, 421-430)		Face muscles Muscles of mastication
	5	Nasopharynx- Chapter 6/7 (p. 386-395, 420-421)		
	7	Muscles of the mouth - Chapter 6/7 (p. 370-385, 416-420)		Skull-mandible Mouth and pharynx Tongue muscles and hyoid
	10	FALL BREAK- NO SCHOOL		
	12	Resonance- Chapter 6/7 (p. 299-303, 430-438)		
	14	Mastication and Deglutition- Chapter 8 (p. 447-466)		
	17	Mastication and Deglutition- Chapter 8 (p. 467-488)	Project Due	



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	19	Examination #2		
	21	Framework of Larynx - Chapter 4/5 (p. 184-188, 200-209, 245-249)		Larynx cartilages
	24	Inner Framework of Larynx - Chapter 4/5 (p. 188-200)		Larynx (part 1 and 2)
	26	Laryngeal Musculature- Chapter 4/5 (p. 209-217, 222-235)		Muscles of larynx
	28	Vocal Folds- Chapter 4/5 (p. 217-222, 249-256)		Larynx mucosa and vocal cords
	31	Vocal Folds- Chapter 4/5 (p. 262-284)		
November	2	Bernoulli Effect- Chapter 5 (p. 257-262)	Project Due	
	4	Structures of Respiration- Chapter 2 (p. 52-74)		Bones of thoracic wall Vertebra features Vertebral column
	7	Soft Tissues of Respiration- Chapter 2 (p. 74-88)		Respiratory system
	9	Movement of air- Chapter 2/3 (p. 88-93, 143-148)		
	11	Volumes, Capacities and pressures- Chapter 3 (p. 149-175)		
	14	Muscles of Inspiration- Chapter 2 (p. 93-119)		Thoracic wall muscles Muscles of neck- (posterior and anterior) Organization of neck
	16	Muscles of Expiration- Chapter 2 (p. 119-131)	Project Due	Abdominal muscles Back muscles (part 1 and 2)
	18	Examination #3		
	21	Case Studies		
	23	THANKSGIVING BREAK		
	25	THANKSGIVING BREAK		
	28	Case Studies		
	30	Case Studies		
December	2	Reading Day		
		Comprehensive Final Exam		



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Tentative Lab Schedule

Date		Topic	Assignments Due
August	23	Terminologies- Skull Bones	
	30	Cranial Nerves, Ear Anatomy	
September	6	Ear Anatomy	
	13	Neuroanatomy	
	20	Neuroanatomy	
	27	Review	
October	4	Lab Exam #1	Lab Book Due
	11	FALL BREAK- NO LAB	
	18	Articulation	
	25	Articulation	
November	1	Phonation	
	8	Phonation	
	15	Respiration	
	22	Respiration	
	29	Lab Final	Lab Book Due

INSTRUCTOR PROFILE



Tammy Shilling, M.A. CCC-SLP

Program Director Undergraduate SLP

Associate Professor of Speech-Language Pathology

Education

Tammy Shilling received her Bachelor of Arts degree in Speech Pathology from the University of Kansas in Lawrence, Kansas in 1990. She received her Master of Arts degree in Speech Pathology from the University of Kansas Medical Center campus in Kansas City, Kansas in 1992. She furthered her education with a Master of Science degree in Management in 1998 from Baker University in Gardner, Kansas.

Biography

Before joining Andrews University faculty, Tammy had 22 years of experience as a Speech Language Pathologist clinician as well as Operations and Clinical Management. She brings experience with adult neurocognitive disorders, Dysphagia, Voice, Tracheostomy and Ventilator, and Modified Barium Swallow Studies in a variety of settings. Tammy has worked in Skilled nursing facilities, Home health, Acute care, Rehab hospital, and Outpatient settings. Tammy has supervised graduate students and CFY's over the past 22 years while practicing in the field. She has had a passion for clinical education in the field. Her passion is to ensure that our graduate students in Speech Pathology are prepared for employment and understand the "real working world."

Tammy was born in Killeen, Texas at the Fort Hood Army Hospital. Tammy returned to Michigan where her mother's family was born and raised in Battle Creek. She is married to Jerry Shilling who works for Siemens Medical. Together, they have two children, Paige and Nicholas.