

LSC Use Only Proposal No:	UWUCC Use Only Proposal No: 11-116e
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Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

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Check all appropriate lines and complete all information. Use a separate cover sheet for each course proposal and/or program proposal.

1. Course Proposals (check all that apply)

☐ New Course ☐ Course Prefix Change ☐ Course Deletion
☒ Course Revision ☐ Course Number and/or Title Change ☒ Catalog Description Change

Current course prefix, number and full title: SPLP 251, Anatomy & Physiology of the Speech & Hearing Mechanism

Proposed course prefix, number and full title, if changing: SPLP 251, Anatomy & Physiology Of Speech and Swallowing

2. Liberal Studies Course Designations, as appropriate
 This course is also proposed as a Liberal Studies Course (please mark the appropriate categories below)

☐ Learning Skills ☐ Knowledge Area ☐ Global and Multicultural Awareness ☐ Writing Across the Curriculum (W Course)
☐ Liberal Studies Elective (please mark the designation(s) that applies – must meet at least one)
 ☐ Global Citizenship ☐ Information Literacy ☐ Oral Communication
 ☐ Quantitative Reasoning ☐ Scientific Literacy ☐ Technological Literacy

3. Other Designations, as appropriate

☐ Honors College Course ☐ Other: (e.g. Women's Studies, Pan African)

4. Program Proposals

☐ Catalog Description Change ☐ Program Revision ☐ Program Title Change ☐ New Track
☐ New Degree Program ☐ New Minor Program ☐ Liberal Studies Requirement Changes ☐ Other

Current program name: _____

Proposed program name, if changing: _____

5. Approvals

	Signature	Date
Department Curriculum Committee Chair(s)	<i>[Signature]</i>	12.5-11
Department Chairperson(s)	<i>[Signature]</i>	11/19/2011
College Curriculum Committee Chair	Edel Reilly TECC Curr Chair	2/27/12
College Dean	<i>[Signature]</i>	3/1/12
Director of Liberal Studies (as needed)		
Director of Honors College (as needed)		
Provost (as needed)		
Additional signature (with title) as appropriate		
UWUCC Co-Chairs	Gail Stehman	3/22/12

Received

Received

MAR 19 2012

MAR 2 2012

Liberal Studies

Liberal Studies

Course Revision

SPLP 251

**Anatomy and Physiology of Speech and Swallowing
(3c-01-3cr)**

1. Syllabus

Find attached the proposed course syllabus.

2. Summary of Changes

Changes are being made to the course title, course catalog description, course objectives, and course content. Anatomy and physiology of the hearing mechanism is being eliminated from the course content. That content is covered in SPLP 222, Introduction to Audiology. Anatomy & physiology of swallowing is being added. A prerequisite has been added that students must be SPLE majors to enroll.

3. Justification/Rationale for the Revision

Knowledge of anatomy and physiology of swallowing is foundational to the clinical coursework in swallowing disorders. Previously, this information would only be provided at the graduate level. Establishing the basic science foundations of swallowing physiology will allow for more advanced content discussions at the graduate level. Previous course content on hearing anatomy and physiology was redundant with information provided in SPLP 222 – Introduction to Audiology. Therefore, the elimination of the material from this course will not be detrimental. The prerequisite was added to ensure that only students who have been admitted to the major may enroll.

4. Old syllabus of record – Old syllabus of record is attached.

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Syllabus of Record

I. Catalog Description

SPLP 251 Anatomy and Physiology of Speech and Swallowing

3 class hours
0 lab hours
3 credits

Prerequisites: SPLE Major

(3c-0l-3cr)
SpEd hours: 0
ELL hours: 0

Examines the structure and function of the body systems involved in speech production (ie. respiration, phonation, articulation) and swallowing and an introduction to the nervous system. Normal variances based upon age, gender, and race are included. Comparisons between normal and disordered clinical presentations will be introduced.

II. Course Outcomes

- 1) Students will demonstrate knowledge of the anatomic structures of respiration, phonation, articulation, resonance and swallowing.
- 2) Students will demonstrate knowledge of the physiology of respiration, phonation, articulation, and swallowing.
- 3) Students will demonstrate knowledge of the normal variances in anatomy & physiology by age, gender, & race.
- 4) Students will demonstrate recognition of the systemic pathways for clinical disorders of respiration, phonation, articulation, and swallowing.

The competencies in this course allow you to meet the following accreditation and certification standards:

<u>Course Objective</u>	College Conceptual Framework/Danielson	ASHA Standards	PDE Standards	Performance Indicator
1	1a	IC; III-A, B	IC	Exam
2	1a	IC; III-A, B,C	IC	Exam
3	1b	III-A, B,C	IH,L	Class presentation
4	1b	IC;III-A, B,C	IC	Cumulative final exam

III. Course Outline (42 hours total)

Weeks 1 & 2 Readings: Seikel Cpt 2 (6 hrs)

Introduction to Anatomy & Physiology (5.5 hrs)

Terminology

Basic elements of Anatomy

Quiz 1 (.5 hr)

Weeks 3 & 4 Readings: Seikel Cpt 3 (6 hrs)

Anatomy of Respiration (5.5 hrs)

Vertebral column

Thoracic structures

Soft tissue structures

Quiz 2 (.5 hr)

Week 5 Readings: Seikel Cpt 4 (3 hrs)

Physiology of Respiration (2.5 hrs)

Respiratory cycle throughout lifespan

Volumes & Capacities & Pressures

Age, gender, race variances

Quiz 3 (.5 hrs)

Weeks 6 & 7 Readings: Seikel Cpt 5 (6 hrs)

Anatomy of Phonation (5.5 hrs)

Bone & cartilages of the larynx

Cavities of the Larynx

Intrinsic & Extrinsic muscles of the larynx

Quiz 4 (.5 hr)

Week 8 Readings: Seikel Cpt 6 (3 hrs)

Physiology of Phonation (2.5 hrs)

Biologic function of the larynx

Aerodynamic Myoelastic theory

Phonatory adjustments (length, mass, tension)

Quiz 5 (.5 hr)

Weeks 9 & 10 Readings: Seikel Cpt 7 (6 hrs)

Anatomy of Articulation & Swallowing (5.5 hrs)

Bones of the Face & Skull

Bones of Oral cavity & Dentition

Muscles of the Face, Pharynx & Oral Cavity

Quiz 6 (.5 hr)

Weeks 11 Readings: Seikel Cpt 8 & 9 (3 hrs)

Physiology of Articulation & Swallowing (2.5 hrs)

Movement of tongue shape & position

Resonance physiology

Phases of the Swallow

Quiz 7 (.5 hr)

Weeks 12 & 13 Readings: Seikel Cpt 12 (6 hrs)

Introduction to Neuroanatomy (5.5 hrs)

Central Nervous System
Cranial Nerves
Quiz 8 (.5 hr)

Weeks 14 (3 hrs)
Review

Cumulative Final Exam (2 hrs)

IV. Evaluation Methods

Eight (8) Quizzes - (20-50 points/each)

All quizzes will focus on the material that has been covered following the previous quiz, including the readings, lectures, handouts, supplemental notes, videos, and discussions.

Class Presentation - (20 pts)

Students will choose a topic addressed in class, review normal anatomy & physiology, and discuss a disorder associated with that anatomic area. Presentations will be approximately 15 minutes in duration and in Powerpoint format with digital images.

Cumulative Final Exam - (100 pts)

The cumulative final exam will be presented during finals week. It will include short answer and diagram labeling.

V. Grading Scale

The final grade will be calculated by dividing the acquired points by the total possible points for a percentage. The following grade distribution will be used to assign final grades:

90-100% = A
80-89% = B
70-79% = C
60-69% = D
0-59% = F

Adaptations will be made to accommodate students with special needs, with appropriate documentation. Students with these concerns should confer with the instructor during office hours at the beginning of the semester to discuss accommodations needed. For further information, refer to the Undergraduate Course Catalog on support provided through the Disability Support Services in Pratt Hall (724-357-4067).

VI. Course Attendance Policy

Attendance in class is expected in accordance with the policy outlined in the university catalog.

VII. Required Textbook

Seikel, J. A., King, D. W., & Drumright, D. G. (2005). *Anatomy and physiology for speech, language, and hearing*. (3rd. ed.). San Diego, CA: Singular Publishing Group.

VIII. Special Resource Requirements

None

IX. Bibliography

Bless, D. & Aronson A. (2009). *Clinical Voice Disorders*. (4th ed.) New York, NY: Thieme Medical Publishers.

Culbertson, W., Tanner, D. (1996). *Introductory Speech and Hearing Anatomy and Physiology Workbook*. Boston: Allyn and Bacon.

Fuller, DR., Pimentel, JT., & Peregoy, BM. (2012). *Applied Anatomy & Physiology for Speech-Language Pathology & Audiology*. Baltimore, MD: Lippincott, Williams, & Wilkins.

Hirano, M. (1981). *Clinical examination of voice*. New York: Springer-Verlag.

Kent, R., & Vorperian, H. (2007). In the mouths of babes: Anatomic, motor, and sensory foundations of speech development in children. In R. Paul (Ed.), *Language disorders from a developmental perspective* (pp. 55–82). Mahwah, NJ: Erlbaum.

Musiek, F.E. & Baran, J.A. (2006). *The auditory system: Anatomy, physiology and clinical correlates*. Glenview, IL: Allyn & Bacon.

Netter, F. (2010). *Atlas of Human Anatomy*. (5th ed.). Philadelphia, PA: Saunders Elsevier.

Palmer, J. (1993). *Anatomy for Speech and Hearing*. Lippincott Williams & Wilkins.

Titze, I.R. (1994). *Principles of voice production*. Englewood Cliffs, NJ: Prentice-Hall

Zemlin, W. (1998). *Speech and Hearing Science: Anatomy and Physiology* (4th ed.). Boston: Allyn & Bacon.

COURSE SYLLABUS

CATALOG DESCRIPTION

SH 251 Anatomy and Physiology of the Speech Mechanism

Prerequisites: None

Consideration of structure and function of organs of speech and hearing. Anatomical systems involved in respiration, phonation, articulation, and hearing, and relationships between systems in production and reception of speech.

COURSE OBJECTIVES

1. Students will become familiar the student with the appropriate terminology used in anatomical and physiological descriptions.
2. Students will be oriented with the gross anatomy involved in the production of speech.
3. Students will be provided with information which will aid in their understanding of the key anatomical structure and aspects for speech associated with the respiratory, phonatory, and articulatory phases of speech production.
4. Students will be acquainted with embryological development of the facial and cranial region and nervous system.
5. Students will gain knowledge of the basic structure and properties of the nerve cells as well as the gross anatomical relationships of the structure of the nervous system.

COURSE OUTLINE

- A. Introduction and Orientation to the Anatomy and Physiology of the Speech Mechanism
 1. Definition of Terms
 2. Structure of the Body
 - Cell
 - Tissue
 - Organs
 - Systems

B. Breathing Mechanism

1. Anatomical Structure

Respiratory System

Trachea

Lungs

Plurae

Framework for Breathing Mechanism

Spinal Column

Rib Cage

Pectorial Girdle

Pelvic Girdle

Musculature for the Breathing Mechanism

Muscles of Inhalation

Diaphragm

Accessory Thoracic Muscles

Accessory Neck Muscles

Muscles of Expiration

Accessory Thoracic

Accessory Abdominal

2. Physiological Function

Muscles of Inspiration

Diaphragm

Accessory Thoracic Muscles

Accessory Neck Muscles

Muscles of Expiration

Accessory Thoracic

Accessory Abdominal

C. Phonation

1. Biological Function of the Larynx

2. Nonbiological Functions

3. Structural Framework for Phonation

Supportive

Cartilaginous

Membranous

4. Laryngeal Cavity

5. Laryngeal Musculature

Intrinsic

Extrinsic

Suprahyoids

Infrahyoids

6. Physiological Function of Muscles

Intrinsic

Extrinsic

Suprahyoids

Infrahyoids

7. Pitch and Intensity Mechanisms
8. Vocal Qualities
 - Breathiness/Hypofunction
 - Harshness/Hyperfunctioning
 - Hoarseness
 - Hypo/Hyper Nasality
 - Whisper

D. The Articulators

1. Bones of the Skull
 - Facial Skeleton
 - Cranium
2. Cavities of the Vocal Tract
 - Nasopharynx
 - Oropharynx
 - Laryngopharynx
3. Articulatory and Resonating Structures
 - Pharynx
 - Palate (Hard and Soft)
 - Tongue
 - Teeth
 - Lips
 - Mandibular Movement

E. Embryology

1. Development and Growth of the Facial Region
 - Early Embryonic Development
 - Development of the Facial Region and Palate
 - Development of the Primary and Secondary Palates
 - Postnatal Growth of the Head

F. The Nervous System

1. Gross Anatomy
 - Central Nervous System
 - Meninges
 - Brain
 - Spinal Cord
 - Peripheral Nervous System
 - Cranial Nerves
 - Spinal Nerves
 - Autonomic Nervous System
 - Structure of Neurons
2. Functional Neuroanatomy
 - Cerebral Cortex
 - Proprioceptive and Exteroceptive Pathways
 - Pyramidal Pathway

EVAUATION METHODS

Examinations. Two exams and a final examination. The content of the exams will be mainly objective, but there will be some short essays.

Practicum. Students will complete workbook assignments that supplement material from the main text. Students will be called upon to describe and discuss related material at any time.

Students will be prepared to discuss material and present ideas orally and/or written/sketched form at any class meeting.

Unannounced pop quizzes may be administered at any time.

Grade Policy - A = 92%
B = 83%
C = 74%
D = 65%
F = Less Than 65% Average

REQUIRED TEXTBOOKS, SUPPLEMENTAL BOOKS AND READINGS

Textbook: Zemlin, Willard R. (1988). Speech and Hearing Science: Anatomy and Physiology, 3rd Edition. Englewood Cliffs, Prentice-Hall.

Zemlin, Willard, R. (1988). Study Guide to Accompany Speech and Hearing Science: Anatomy and Physiology, 3rd Edition. Champaign, IL: Stipes Publishing Company.

BIBLIOGRAPHY

Best, Charles; Taylor, Herbert and Burke, Norman (1961). The Physiological Basis of Medical Practice. Baltimore, MD: Williams and Wilkins.

Buchanan, A.R., M.D. (1953). Functional Neuro Anatomy. Philadelphia, PA: Lea and Febiger.

Dox, Ida; Biagio; Melloni, John, Ph.D. and Eisher, Gilbert, D. (1985). Melloni's Illustrated Medical Dictionary, 2nd Edition. Baltimore, MD: Williams and Wilkins.

Gardner, Ernest, M.D. (1964). Fundamentals of Neurology.

Philadelphia, PA: W.B. Sanders, Co.

Gray, Henry, F.R.S. (1968). Gray's Anatomy, 28th Edition.
Philadelphia, PA: Lea and Febiger.

Love, Russell J. and Webb, Wanda G. (1986). Neurology for
the Speech Language Pathologist. Boston, MA:
Butterworths Publishing.

Penfield, Wilder and Lamar, Roberts (1972). Speech and
Brain Mechanisms. New York, NY: Atheneum (Original
Published by Princeton V Press, 1959.)

Perkins, William H and Kent, Raymond D. (1986). Functional
Anatomy of Speech, Language, and Hearing. San Diego, CA:
College Hill Press.

Stedman, T.L. (1966). Stedman's Medical Dictionary, 21st
Edition. Baltimore, MD: Williams and Wilkins.

Thomas, Clayton L., M.D. (1981). Taber's Cyclopedic
Medical Dictionary. Philadelphia, PA: F.A. Davis Co.
Vander, Arthur J.; Sherman, James H. and Luciano,
Dorothy S.
(1975).

Human Physiology - The Mechanisms of Body Function. New
York, NY: McGraw Hill.

Zemlin, Eileen and Zemlin, W.R. (1983). Study
Guide/Workbook to Accompany Speech and Hearing Science
Anatomy and Physiology, 2nd Edition. Champaign, IL:
Stipes Publishing Co.