**College of Health and Human Services**

**Department of Communication Sciences & Disorders**

**CSD 251: ANATOMY AND PHYSIOLOGY FOR SPEECH AND LANGUAGE PATHOLOGISTS**

**ONLINE VERSION**

**3 credit hours**

**Instructor:** William R. Culbertson, Ph.D.

**Office:** SAS 407

**Phone:** 928-523-7440

**Office Hours: N/A.** Students can reach me via the BBLearn Message Center or via telephone. Do not use the NAU email system for matters concerning this course.

**Email:** bill.culbertson@nau.edu

**Time/Place: N/A: Asynchronous Web Course**

**Course prerequisites** : None

**Course description:** *"STRUCTURE AND FUNCTIONS OF THE MECHANISMS USED IN SPEECH AND LANGUAGE."*

CSD 251 online consists of written lectures and demonstrations to accompany assigned readings in the required text. In addition to the required readings, the student is encouraged to pursue other material related to the subject of focus.

There is a vast amount of material available on all anatomy topics on the web. Students are expected to search and examine such information in an active learning strategy.

**Learner (Course) Objectives\*:**

**GOAL:** CSD 251 is intended to provide the prospective speech/language pathologist with a working knowledge of human anatomy/physiology as it relates to the process of communication. The successful student of CSD 251 will:

1. Develop a general orientation to Anatomy/Physiology as sciences, including their branches and relationships.

2. Learn the basic types, locations and functions of cells and tissues in the human body.

3. Learn the form and function of the respiratory mechanism, especially as it applies to the production of speech.

4. Learn the form and function of the phonatory mechanism, especially as it applies to the production of speech.

5. Learn the form and function of the oral, nasal and pharyngeal mechanisms and understand how they coordinate in the articulation of speech.

6. Summarize the coordination of form and function in the respiratory, phonatory, articulatory, nervous and auditory systems (as time permits) for the production of speech.

7. Apply the anatomy and physiology of the speech mechanism to the functions of mastication and deglutition.

\*Note: CSD 376, Hearing Science and CSD 405, Neurological foundations of Speech, Language and Hearing, present detailed content about the anatomy and physiology of the human auditory and nervous systems.

**Outcome Measures:**

1. Students will respond to section test items with 70% or greater accuracy.

1. Students will respond to a comprehensive final examination with 70% or greater accuracy.
2. Students will write a summary describing how the mechanisms of respiration, phonation and articulation act together to produce speech.

### Course Structure/approach: CSD 251 consists of lectures and demonstrations to accompany assigned readings in the text. In addition to the readings, the student is encouraged to pursue other material related to the subject of focus. Additional study aids will include models, videotapes, and instructor-prepared materials, available through the department office and the Cline Library. Active learning is an important aspect of the approach.

**Web Notes:**

Lecture notes are available online through the ***BBLearn*** shell.

**Text:**

Culbertson, W.R. and Tanner, D.C. (2011). *The anatomy and physiology of speech and swallowing.* Dubuque, IA: Kendall-Hunt.

**Suggested Workbook:**

Culbertson, W.R., Christensen, S.C. and Tanner, D.C. (2012). *Anatomy and physiology study guide for speech and hearing* (2nd ed.). Dan Diego, CA: Plural.

This workbook contains a structured approach for study, with sections for students to complete as they work through the complex material of this course.

**Online Discussions:**

**To capture as much of the classroom experience as possible in the online format, your instructor or TA will create online discussions as we go through the course. Participation is not required, but participation will extend the scope and depth of students’ knowledge and study.**

**Recommended Anatomy Portfolio:**

Students are strongly recommended to prepare their own anatomy portfolios. This is not required, but it is a sign of a thorough and dedicated student.

Students are encouraged to be creative in preparing an anatomy portfolio, because it will serve them throughout their educational experiences and on into their professional experience.

A suggested model for a portfolio would consist of a minimum of six sections. The first section will consist of a narrative describing the coordination of the respiratory, phonatory, articulatory systems. This is followed by one section for each of the course sections, detailing your studies in each area.

**Class Schedule:**

I. Introduction and Orientation to Anatomy and Physiology

II. Cytology and Histology  **TEST:**  **Sections I, II**

III. The Respiratory Mechanism **TEST: Section** **III**

IV. The Phonatory Mechanism **TEST: Section IV**

V. The Articulatory Mechanism **TEST: Section V**

**Evaluation methods and deadlines**

Students will be graded according to their test scores (2/3) and the speech production summary (1/3). Section tests and the final examination account for 2/3 of the final grade. The speech production summary counts as 1/3 of the final grade.

Among the test scores, the cumulative final examination is worth 25% and the average of the section tests is worth 75%.

# Guidelines for Evaluation Mechanisms

ALL MATERIALS, INCLUDING TESTS, EXAMS, AND PAPERS MUST BE SUBMITTED BY THE END OF THE TERM TO RECEIVE ANY CREDIT.

**Section Tests:** There will be four section tests and a final examination. Each test will cover the indicated sections and will be presented on the dates indicated. The average of the section test scores counts as ¾ of the test/examination average, which, in turn, amounts to two-thirds of the final grade.

Tests are administered online through the *BBLearn* shell, and the times the tests will be available will be announced in class. Students will have up to TWO opportunities to take the tests, and the final test score will be the higher of the TWO attempts. Students do not have to take the additional attempts for a test if they are satisfied with their grade for the first attempt. Tests taken after their due dates, with permission of your instructor, can earn grades no higher than 75%.

**The Final Examination** will be presented online during examination week. Final examination test items will be taken from the entire course's material. The final examination score counts as ¼ of the test/examination average, which, in turn, amounts to two-thirds of the final grade.

**Evaluation methods and deadlines**

Students will be graded according to their scores on section tests, the final examination and by their preparation of a speech anatomy term paper.

# Guidelines for Evaluation Mechanisms

**Section Tests:** There will be four section tests and a final examination. Each test will cover the indicated sections and will be presented on pre-arranged and posted dates.

Tests are administered online through the *BBLearn* shell, and the times the tests will be available will be announced in class. Students will have up to two opportunities to take the tests, and the final test score will be the highest of the attempts. Students do not have to take the additional attempt for a test if they are satisfied with their grade for the first attempt.

**The Final Examination** will be presented online on the scheduled date for this class during examination week. Final examination test items will be taken from the entire course's material. Students will have up to two opportunities to take the final examination, and the score will be the higher of the two attempts. Students do not have to take the additional attempt for the final examination if they are satisfied with the grade for the first attempt.

**The Speech Production paper is due April 24, 2018.**

***LATE PAPERS WILL LOSE 20% CREDIT PER DAY UNTIL THEY ARE RECEIVED***

The overall semester's grade will be computed by a method that credits the average of the section tests and final examination with 2/3 of the total value and the anatomy term paper with 1/3 of the total value. Students can earn up to 150 total points for work performed in the course: 100 for the examinations and 50 for Speech Production Paper

GRADE POINT SCALE: The grade point scale is based on 150 possible points. Assignment of letter grades is as follows:

A = 90% to 100% C = 70% to 79% F = <60%

B = 80% to 89% D = 60% to 69%

Speech Production Term Paper Rubric

"Write a summary describing how the mechanisms of respiration, phonation and articulation, governed by the nervous system, act together to produce speech."

Introductory Paragraph

Respiration 33%

The Role of Respiration in Speech

Physiology of Respiration for Speech

Pulmonic Air Flow for Speech as Contrasted with Tidal Breathing

Phonation 33%

Physiology of Phonation

Laryngeal Skeleton

Laryngeal Muscles and their Functions

Articulation 33%

Functions of Speech Articulators in General

Facial Articulators: Speech Function; Skeleton; Tissues and Muscles

Oral Articulators: Speech Function; Skeleton; Tissues and Muscles

Velopharyngeal Sphincter: Speech Function; Skeleton; Tissues and Muscles

Laryngeal Contribution to Speech Articulation: Speech Function; Tissues and Muscles

Summary Paragraph

**Speech Analysis Paper Scoring Guide**

**Speech analysis papers will be graded according to this guide:**

"Write a summary describing how the mechanisms of respiration, phonation and articulation, governed by the nervous system, act together to produce speech."

**A (Superior) 100%**

An “A” paper demonstrates probing critical reading and/or analysis. It thoroughly evaluates various elements of its subject matter with creative, detailed reasoning and use of evidence. It demonstrates the student's strength in understanding the topic. Its organization shows a logical arrangement of parts, and all parts are relevant to the thesis. The thesis statement expresses a clear, confident stance and provides an accurate, concise forecast of topics to be developed. Paragraphs have a sharp focus and include carefully selected evidence. Sentences within paragraphs are linked by tight logical connections and effective transitions. Documentation, when needed, conforms to all appropriate conventions. Sentences are varied in structure and imaginative in style; wording is concise; style and tone create a distinctive voice. The final, revised paper is free of all serious errors in grammar and punctuation. There are no misspellings.

**B (Strong) 85%**

A “B” paper shows good critical reading skills and offers convincing reading and evidence; the parts of the essay are logically arranged and relevant to the topic. The paper demonstrates the student's understanding of the topic, but may not be sufficient to be rated as "strong." Paragraphs are unified, and supporting details are sufficient and relevant. Documentation, when needed, conforms to most appropriate conventions. Sentences are linked by logical connections and adequate transitions. Sentences show variety. Wording is, for the most part, concise and appropriate. The paper contains very infrequent errors in grammar, punctuation, and spelling.

**C (Competent) 75%**

A “C” paper demonstrates an understanding of texts and materials, and treats the topic sufficiently. The paper conveys the student's general understanding of basic processes involved. Paragraphs and supporting details relate to the topic, but may do so only generally. The sentences within the paragraphs are, for the most part, related and contain adequate transitions. (Transitions between paragraphs, however, may be unclear or missing at times.) Sentence style may consist of relatively simple sentence patterns. Word choice is largely appropriate, but may sometimes by problematic—simplistic or repetitive, perhaps. Mistakes in grammar, punctuation, documentation, and spelling may occur with some frequency, but most of these elements of the paper should be correct on the final, revised copy.

**D (Below Average) 65%**

The below average paper suggests the student has an incomplete understanding of the topic. The paper also fails to practice one or more of the principles of critical reading or writing. For instance, it may show an inability to correctly identify the main idea of a text. It may attempt to defend its thesis in illogical or unconvincing ways. The paper may resort excessively to summary. The paper may lack content and repeat ideas or “pad” simply to fill space. The paragraphs may lack topic sentences. Some paragraphs may lack adequate supporting detail or may wander from the main idea. Documentation may be faulty. Sentences within paragraphs are only loosely related, and transitions are missing. Sentences may be excessively wordy or vague. Style and word choice are flat, inconsistent, or inappropriate to the audience. The paper displays major or repeated errors in grammar, punctuation, and spelling, even in the final revised copy.

**F (Failure) 50%**

An “F” paper demonstrates that the student does not grasp the principles of the topic. Like a D paper, it also shows a failure to practice one or more of the principles of critical reading or writing, but an F paper reveals persistent problems, such as the following: the paragraphs lack focus; sentences within the paragraphs are unrelated to the main idea, and transitions are missing; sentences are faulty in structure, or vague, wordy, and irrelevant; word choice is inappropriate, incorrect, or inconsistent; frequent major errors in grammar, punctuation, documentation, and spelling indicate an inability to handle the conventions of written discourse; there are excessive misspellings. A paper that fails entirely to address the assignment topic also merits an “F.”

*Based on: Belmont University Department of English as transmitted through NAU Office of Academic Assessment*

**Course Policies:**

**Students must adhere to the Northern Arizona University course policy statements. For the full policy visit:**

[**http://nau.edu/OCLDAA/\_Forms/UCC/SyllabusPolicyStmts2-2014/**](http://nau.edu/OCLDAA/_Forms/UCC/SyllabusPolicyStmts2-2014/)**)**

This section is provided for students who wish to apply for professional certification through the American Speech-Language-Hearing Association (ASHA). It can be used to complete the "Knowledge and Skills Assessment (KASA)" form required by that body.

Note that the entry-level educational requirement for professional certification is the master's degree or its equivalent.

**CSD 251 Skills Outcomes re: ASHA Standard IV**

**See: http://www.asha.org/Certification/2014-Speech-Language-Pathology-Certification-Standards/**

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|  |  | A | **B** | **C** | **D** | **E** | **F** | **G** | **H** |
| **Learner Outcomes** | **Assessment Method** | Principles of Sciences | **Knowledge of basic human comm. processes** | **Knowledge of Nature of speech, language, hearing and comm. disorders** | **Prevention and assessment and intervention** | **Ethical Conduct** | **Research Principles** | **Professional Issues** | **Professional Credentials** |
| Develop a general orientation to Anatomy/Physiology as sciences, including their branches and relationships. | Section Tests and Final Exam. |  |  |  |  |  |  |  |  |
| Learn the basic types, locations and functions of cells and tissues in the human body. | Section Test |  | X | X |  |  |  |  |  |
| Learn the form and function of the respiratory mechanism, especially as it applies to the production of speech. | Section Test |  | X | X |  |  |  |  |  |
| Learn the form and function of the phonatory mechanism, especially as it applies to the production of speech. | Section Test |  | X | X |  |  |  |  |  |
| Learn the form and function of the oral, nasal and pharyngeal mechanisms and understand how they coordinate in the articulation of speech. | Section Test |  | X | X |  |  |  |  |  |
| Learn the basic structure and function of the human nervous system and major points about its function in the expression and reception of language. | Section Test |  | X | X |  |  |  |  |  |
| Learn the form and function of the major divisions of the human auditory mechanism (optional). | Section Test |  | X | X |  |  |  |  |  |
| Summarize the coordination of form and function in the respiratory, phonatory, articulatory, nervous and auditory systems (as time permits) for the production of speech. | Speech Production Paper |  | X | X |  |  |  |  |  |
| Apply the anatomy and physiology of the speech mechanism to the functions of mastication and deglutition. | Section Tests and  Final Exam |  | X | X |  |  |  |  |  |