

College of Health and Human Services

NAU dates: August 29 – December 9, 2022

GENERAL INFORMATION

Name of College: College of Health and Human Services

Name of Department: Communication Sciences & Disorders

Course: CSD 375

Semester/Year: Fall 2022

Credit hours: 3

Time/Place: Asynchronous Online

Course Instructor: Kim Farinella, Ph.D., CCC-SLP; **Office Phone:** 928-523-4699

Teaching Assistants: Mckenzie Schable and Taylor Gallagher

Contact: Use BbLearn Course Messages

COURSE PREREQUISITES:

CSD 202 and CSD 251, or their equivalent, or instructor consent

COURSE PURPOSE:

The purpose of this online course is to introduce students to the foundation of speech and language sciences, and to prepare the student for future coursework in the field of clinical speech-language pathology.

COURSE DESCRIPTION:

This course addresses the fundamentals of the speech and languages sciences. The content will be general, and will lead students to explore, scientific research methods, physics, acoustics, respiratory science, voice production, acoustic phonetics, and sound spectrography. Language representation, motor programming fundamentals of speech perception, and instrumentation as it pertains to the dynamic process of speech communication will be explored as well.

LEARNER (COURSE) OBJECTIVES:

CSD 375 is intended to provide the undergraduate student with knowledge of speech and language sciences as they pertain to speech production and speech perception.

The successful student of CSD 375 will:

1. Describe the scientific method and various types of research used to study the normal aspects of speech, language, and hearing (Module 1)
2. Interpret the basics of physics as they pertain to energy, motion, displacement, force, and pressure, and their relationship to speech production (Module 1)
3. Describe the process of respiration as it pertains to gas compression, speech valving, driving pressure, impedance, and flow (Module 2)

4. Describe voice onset, modes of vocal vibration, pitch adjustment, loudness, and quality (Module 2)
5. Describe the process of dynamic interaction representation at the cortical and subcortical levels of the five basic speech processes: respiration, phonation, articulation, resonance, and prosody (Module 3)
6. Describe theories of speech production and speech perception (Module 4)

COURSE STRUCTURE/APPROACH:

CSD 375 consists of online powerpoints and a required textbook. **Power Point presentations are posted in the BbLearn shell.** In addition to the required readings in the textbook and online, the student is encouraged to pursue other material related to the subject. Links for online supplementary material are provided in the powerpoints.

Required Textbook: Ferrand, C. (2018). *Speech science: An integrated approach to theory and clinical practice* (4th ed.). Plural Publishing, Inc.

GRADING: A standard grading scale will be used (90-100% = A; 80-89% = B; 70-79% = C; 60 - 69 = D; below 60% = F).

COURSE OUTCOMES:

EXAMINATIONS 100 points:

You will take **four online examinations** in Bblearn each worth 25 points. Examinations are timed (60 minutes each) and you are allowed to use your Terminology Portfolio and Learning Objective outlines when completing these exams. Examinations will open on **Friday morning** and close **Sunday evening** on the following test dates:

1. Test for Module 1 opens **9/23** at 12:30am and closes **9/25** at 11:59pm.
2. Test for Module 2 opens **10/21** at 12:30am and closes **10/23** at 11:59pm.
3. Test for Module 3 opens **11/18** at 12:30am and closes **11/20** at 11:59pm.
4. Test for Module 4 opens **12/09** at 12:30am and closes **12/11** at 11:59pm.

Tests taken after their due dates, only possible with the permission of the instructor, can earn grades no higher than 75% (18.75/25 points).

TERMINOLOGY PORTFOLIO 70 points: The Terminology Portfolio for each module has scheduled due dates, so plan accordingly.

Terminology Portfolio Rubric (each term defined is worth 1 point)

Score	Content
1	The term is defined with 100% accuracy based on required course readings.
0.5	The term is defined with 50% accuracy based on required course readings.
0	Term is not defined correctly or not defined based on required course readings.

MODULE ACTIVITIES 40 points You are required to complete an applied activity associated with each module (there are four course modules). Each applied activity is worth 10 points. Module activities have scheduled due dates so plan accordingly.

Score	Applied Module Activity Completion Score
10	Student followed all module instructions, and successfully completed 100% of the activity as evidenced by written responses/descriptions and applied output or outcomes.
5	Student followed all module instructions, and successfully completed 75% - 99% of the activity as evidenced by written responses/descriptions and applied output or outcomes.
2.5	An attempt to complete the module activity was made but the majority was not completed or completed incorrectly.
0	The module activity was 0% complete.

DISCUSSION POSTS 30 points One of the Course Tools you will be using throughout the semester is the Discussion Board tool. For each learning module, discussion prompts have been developed to guide your reading and help you understand the material being presented. You are required to respond to each discussion prompt by the scheduled due date. Your post must include evidence-based responses to the questions. A grading rubric will be used. Feel free to share educational videos, pictures, ppt slides etc. in your post. Posts should include citations in APA format:

<https://owl.english.purdue.edu/owl/resource/560/01/>

Score	Accuracy, Clarity, Organization and Writing Mechanics of Written Response to Discussion Board Questions
5	Discussion post was clear, correct, and evidence-based according to reference/citation. All aspects of the discussion question were addressed, and response was well-organized and clearly answered each aspect of the question. Writing mechanics, including spelling and grammar were 100% accurate.
2.5	Discussion post was clear, correct, and evidence-based according to reference/citation. Only part of the discussion question was addressed; some information was missing, and the discussion question was not addressed in its entirety. Writing mechanics, including spelling and grammar were mostly accurate.
0	Discussion was disorganized; did not adhere to evidence-based literature; and/or no references were provided. Most aspects of the discussion question were not addressed. Writing mechanics were poor. Alternatively, discussion post was not completed by the due date.

COURSE OUTLINE

Module 1 (Weeks 1 – 4)

- The Scientific Method and Research Techniques (Supplemental Powerpoint 1)
- The Nature of Sound (Required Text: Chap. 1; Supplemental Powerpoint 1)
 - Basic Physics Concepts
 - Changes in Air Pressure
 - Simple Harmonic Motion
 - Frequency

- o Amplitude
- o Intensity
- o Pressure
- o Pure Tones
- o Complex Waves
- Resonance and Spectrography (Chapter 6 [pages 223 – 226; 234 – 236]; Supplemental Powerpoint 1)
 - o Spectrum
 - o Speech Spectrography

Discussion Board Posts 1a: Due September 7; 1b Due September 19

Module 1 Applied Activity 1: Due September 14 (Assignment details in BbLearn)

Module 1 Terminology Portfolio Assignment #1: Due September 21

Test 1: Basic Physics; Acoustics; Spectrum/Speech Spectrography opens September 23

You may use your Terminology Portfolio and whatever written outlines you created to address the Learning Outcomes listed in each Powerpoint Presentation. The exam is based on all Learning Outcomes and required terminology for this module.

Module 2 (Weeks 5 – 8)

- Respiratory Processes (Chap. 2; Chap. 3 [pages 88 – 96]; Supplemental Powerpoint 2)
 - o Resting Breathing
 - o Speech Breathing
 - o Lung Volumes and Capacities
 - o Measurement of Respiratory Variables
- Phonatory/Laryngeal System (Chap. 4; Chap. 5 [pages 155 – 176]; Supplemental Powerpoint 2)
 - o Laryngeal valves
 - o Cover-Body Model
 - o Models and Features of Vocal Fold Vibration
 - o Frequency
 - o Amplitude
 - o Voice Quality
 - o Vocal Registers
 - o Measurement of Phonatory Variables
- Articulatory/Resonatory (Supralaryngeal) Processes and Acoustic Phonetics (Chap. 6; Chap. 7 [255 – 260]; Supplemental Powerpoint 2)
 - o Structures of the Vocal Tract
 - o Classification of Consonants and Vowels
 - o Source-Filter Theory of Vowel Production
 - o Spectrographic Characteristics of Vowels and Consonants
 - o Formant Frequencies and Transitions
 - o Voice Onset Time
 - o Coarticulation
 - o Suprasegmentals

Discussion Board Posts 2a: Due October 3; 2b: Due October 17

Module 2 Applied Activity 2: Due October 12 (Assignment details in BbLearn)

Module 2 Terminology Portfolio Assignment #2: Due October 19

Test 2: Respiratory, Laryngeal, and Supralaryngeal Processes opens October 21

You may use your Terminology Portfolio and whatever written outlines you created to address the Learning Outcomes listed in each Powerpoint Presentation. The exam is based on all Learning Outcomes and required terminology for this module.

Module 3 (Weeks 9 – 12)

- Central and Peripheral Nervous Systems (Chap. 10; Supplemental Powerpoint 3)
 - Neurons
 - Neurotransmission
 - Functional Brain Anatomy (Cortical/Subcortical)
 - Cranial and Spinal Nerves
 - Motor Control Systems involved in Speech Production

Module 3 Applied Activity 3: November 9 (Assignment details in BbLearn)

Discussion Board Posts 3: Due November 14

Module 3 Terminology Portfolio Assignment #3: Due November 16

Test 3: Neurological Substrates of Speech Production opens November 18

You may use your Terminology Portfolio and whatever written outlines you created to address the Learning Outcomes listed in each Powerpoint Presentation. The exam is based on all Learning Outcomes and required terminology for this module.

Module 4 (Weeks 13 – 15)

- Speech Perception/Models of Speech Production and Perception (Chap. 8 [pages 293 – 303]; Chap. 9 [pages 314 – 326]; Chap. 12; Supplemental Powerpoint 4)
 - Speech Perception
 - Perception of Vowels and Diphthongs
 - Categorical Perception
 - Perception of Consonants
 - Speech Perception and Disorders
 - Models and Theories of Speech Perception and Speech Production

Discussion Board Post 4: Due November 28

Module 4 Applied Activity 4: Due December 5 (Assignment details in BbLearn)

Module 4 Terminology Portfolio Assignment #4: Due December 7

Test 4: Models of Speech Production and Speech Perception opens December 9

You may use your Terminology Portfolio and whatever written outlines you created to address the Learning Outcomes listed in each Powerpoint Presentation. The exam is based on all Learning Outcomes and required terminology for this module.

Students who are successful in this course:

- Devote a block of time each day to course work [expect to spend about 9 – 12 hours per week on this course]
- Enter Bblearn frequently to read announcements or to work on content
- Create a plan for how and when to complete content and assignments.
- Complete all assigned readings
- Make use of the additional information provided that supplements the textbook as study guides.
- Complete assignments according to directions and rubrics and submit by the due dates
- Interact frequently with other members of the learning community (other students and instructor).
- E-mail the instructor with problems or concerns sooner rather than later.

Resources for Student Success:

Successful university students take advantage of services and resources designed to boost learning and achievement. NAU recommends that you begin with:

[ResourceConnect](https://nau.edu/provost/vpaa/resource-connect/resource-connect/)- your online central navigation point for all NAU student resources:
<https://nau.edu/provost/vpaa/resource-connect/resource-connect/>

Change in Syllabus:

This syllabus is a tentative document and is subject to change with reasonable advance notice. The policies on grading will NOT change.

COVID-19 REQUIREMENTS AND INFORMATION

Additional information about the University’s response to COVID-19 is available from the **Jacks are Back!** web page located at <https://nau.edu/jacks-are-back>.

SYLLABUS POLICY STATEMENTS

ACADEMIC INTEGRITY

NAU expects every student to firmly adhere to a strong ethical code of academic integrity in all their scholarly pursuits. The primary attributes of academic integrity are honesty, trustworthiness, fairness, and responsibility. As a student, you are expected to submit original work while giving proper credit to other people’s ideas or contributions. Acting with academic integrity means completing your assignments independently while truthfully acknowledging all sources of information, or collaboration with others when appropriate. When you submit your work, you are implicitly declaring that the work is your own. Academic integrity is expected not only during formal coursework, but in all your relationships or interactions that are connected to the educational enterprise. All forms of academic deceit such as plagiarism, cheating, collusion, falsification or fabrication of results or records, permitting your work to be submitted by another, or inappropriately recycling your own work from one class to another, constitute academic misconduct that may result in serious disciplinary consequences. All students and faculty members are responsible for reporting suspected instances of academic misconduct. All students are encouraged to complete NAU’s online academic integrity workshop available in the E-Learning Center and should review the full Academic Integrity policy available at

<https://policy.nau.edu/policy/policy.aspx?num=100601>.

COPYRIGHT INFRINGEMENT

All lectures and course materials, including but not limited to exams, quizzes, study outlines, and similar materials are protected by copyright. These materials may not be shared, uploaded, distributed, reproduced, or publicly displayed without the express written permission of NAU. Sharing materials on websites such as Course Hero, Chegg, or related websites is considered copyright infringement subject to United States Copyright Law and a violation of NAU Student Code of Conduct. For additional information on ABOR policies relating to course materials, please refer to ABOR Policy 6-908 A(2)(5).

COURSE TIME COMMITMENT

Pursuant to Arizona Board of Regents guidance (ABOR Policy 2-224, Academic Credit), each unit of credit requires a minimum of 45 hours of work by students, including but not limited to, class time, preparation, homework, and studying. For example, for a 3-credit course a student should expect to work at least 8.5 hours each week in a 16-week session and a minimum of 33 hours per week for a 3-credit course in a 4-week session.

DISRUPTIVE BEHAVIOR

Membership in NAU's academic community entails a special obligation to maintain class environments that are conducive to learning, whether instruction is taking place in the classroom, a laboratory or clinical setting, during course-related fieldwork, or online. Students have the obligation to engage in the educational process in a manner that does not interfere with normal class activities or violate the rights of others. Instructors have the authority and responsibility to address disruptive behavior that interferes with student learning, which can include the involuntary withdrawal of a student from a course with a grade of "W". For additional information, see NAU's Disruptive Behavior in an Instructional Setting policy at <https://nau.edu/university-policy-library/disruptive-behavior>.

NONDISCRIMINATION AND ANTI-HARASSMENT

*NAU prohibits discrimination and harassment based on sex, gender, gender identity, race, color, age, national origin, religion, sexual orientation, disability, veteran status and genetic information. Certain consensual amorous or sexual relationships between faculty and students are also prohibited as set forth in the *Consensual Romantic and Sexual Relationships policy*. The Equity and Access Office (EAO) responds to complaints regarding discrimination and harassment that fall under NAU's Nondiscrimination and Anti-Harassment policy. EAO also assists with religious accommodations. For additional information about nondiscrimination or anti-harassment or to file a complaint, contact EAO located in Old Main (building 10), Room 113, PO Box 4083, Flagstaff, AZ 86011, or by phone at 928-523-3312 (TTY: 928-523-1006), fax at 928-523-9977, email at equityandaccess@nau.edu, or visit the EAO website at <https://nau.edu/equity-and-access>.*

TITLE IX

Title IX of the Education Amendments of 1972, as amended, protects individuals from discrimination based on sex in any educational program or activity operated by recipients of federal financial assistance. In accordance with Title IX, Northern Arizona University prohibits discrimination based on sex or gender in all its programs or activities. Sex discrimination includes sexual harassment, sexual assault, relationship violence, and stalking. NAU does not discriminate on the basis of sex in the education programs or activities that it operates, including in admission and employment. NAU is committed to providing an environment free from discrimination based on sex or gender and provides a number of supportive measures that assist students, faculty, and staff.

One may direct inquiries concerning the application of Title IX to either or both the Title IX Coordinator or the U.S. Department of Education, Assistant Secretary, Office of Civil Rights. You may contact the Title IX Coordinator in the Office for the Resolution of Sexual Misconduct by phone at 928-523-5434, by fax at 928-523-0640, or by email at titleix@nau.edu. In furtherance of its Title IX obligations, NAU promptly will investigate or equitably resolve all reports of sex or gender-based discrimination, harassment, or sexual misconduct and will eliminate any hostile environment as defined by law. The Office for the Resolution of Sexual Misconduct (ORSM): Title IX Institutional Compliance, Prevention & Response addresses matters that fall under the university's Sexual Misconduct policy. Additional important information and related resources, including how to request immediate help or confidential support following an act of sexual violence, is available at <https://in.nau.edu/title-ix>.

ACCESSIBILITY

Professional disability specialists are available at Disability Resources to facilitate a range of academic

support services and accommodations for students with disabilities. If you have a documented disability, you can request assistance by contacting Disability Resources at 928-523-8773 (voice), 928-523-8747 (fax), or dr@nau.edu (e-mail). Once eligibility has been determined, students register with Disability Resources every semester to activate their approved accommodations. Although a student may request an accommodation at any time, it is best to initiate the application process at least four weeks before a student wishes to receive an accommodation. Students may begin the accommodation process by submitting a self-identification form online at <https://nau.edu/disability-resources/student-eligibility-process> or by contacting Disability Resources. The Director of Disability Resources, Jamie Axelrod, serves as NAU's Americans with Disabilities Act Coordinator and Section 504 Compliance Officer. He can be reached at jamie.axelrod@nau.edu.

RESPONSIBLE CONDUCT OF RESEARCH

Students who engage in research at NAU must receive appropriate Responsible Conduct of Research (RCR) training. This instruction is designed to help ensure proper awareness and application of well-established professional norms and ethical principles related to the performance of all scientific research activities. More information regarding RCR training is available at <https://nau.edu/research/compliance/research-integrity>.

MISCONDUCT IN RESEARCH

As noted, NAU expects every student to firmly adhere to a strong code of academic integrity in all their scholarly pursuits. This includes avoiding fabrication, falsification, or plagiarism when conducting research or reporting research results. Engaging in research misconduct may result in serious disciplinary consequences. Students must also report any suspected or actual instances of research misconduct of which they become aware. Allegations of research misconduct should be reported to your instructor or the University's Research Integrity Officer, Dr. David Faguy, who can be reached at david.faguy@nau.edu or 928-523-6117. More information about misconduct in research is available at <https://nau.edu/university-policy-library/misconduct-in-research>.

SENSITIVE COURSE MATERIALS

University education aims to expand student understanding and awareness. Thus, it necessarily involves engagement with a wide range of information, ideas, and creative representations. In their college studies, students can expect to encounter and to critically appraise materials that may differ from and perhaps challenge familiar understandings, ideas, and beliefs. Students are encouraged to discuss these matters with faculty.

Last revised August 4, 2022