Communication Sciences and Disorders  
Department of Human Services and Ed Leadership  
James I. Perkins College of Education  
Introduction to Speech Science  
Fall 2023

Program: CSDS  
Course: 5307  
Section: 020  
Semester: Fall 2023

Instructor: Nandhu Radhakrishnan, PhD., CCC-SLP  
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Phone: 468-1337  
Email: radhakrin@sfasu.edu  
Office Hours: Wednesdays Noon to 2pm  
Thursdays 11am – 1pm

Lecture Type: Virtual-Synchronous  
Day: Tuesdays  
Delivery: Zoom  
Link provided on D2L Course Site

Prerequisites: Enrollment in the SLP Program or by consent of the instructor

I. Course Description:

Physical bases and processes of the production and perception of speech, language, and hearing, including biomechanics and the source-filter theory of speech production. This course will be taught online. Our synchronous ZOOM sessions will be on Tuesdays between 6:00 pm and 8:30 pm. In-class and out-of-class requirements are as follows:

- **In-class time (2.5 hours weekly):** We will meet Tuesdays for 15 weeks via ZOOM (synchronous) in which we will study the scientific production and perception of speech and hearing. We will cover the biomechanics of speech science, including a review of anatomy and physiology. Moreover, we will explore scientific measures that are used to study the physiological aspects of speech and voice production. Theoretical models of speech perception will be discussed, and the clinical application of those models will be reviewed. You may also be asked to participate in Break Out rooms and other activities during the synchronous ZOOM sessions.

- **Out-of-class time:** Outside of class, students will have significant weekly reading assignments, and are expected to complete all readings, viewings, writing assignments, and lab activities. These include videos, group projects, readings, and conducting, analyzing, and interpreting speech science instrumentation.
Exams will be completed during the regularly scheduled class days,

II. Intended Learning Outcomes/Goals/Objectives (Program/Student Learning Outcomes): This course reflects the following Core values of the College of Education:

The mission of the Perkins College of Education is to prepare competent, successful, caring and enthusiastic professionals from diverse backgrounds dedicated to responsible service, leadership, social justice, and continued professional and intellectual development in an interconnected global society. In the Perkins College of Education, we value and are committed to:

- Academic excellence through critical, reflective, and creative thinking
- Life-long learning
- Collaboration and shared decision-making
- Openness to new ideas, to culturally diverse people, and to innovation and change
- Integrity, responsibility, diligence, and ethical behavior
- Service that enriches the community.

This course reflects the mission of the Department of Human Services and Educational Leadership:

The Department of Human Services prepares undergraduates and graduate students for leadership and service roles in East Texas and the global community. The department is committed to incorporation of community-based, service-learning experiences within its educational programs to maximize the advancement of students’ personal and professional development.

This course supports the mission of the Speech-Language Pathology Program:

The mission of the Speech-Language Pathology Program is to prepare knowledgeable professionals committed to enhancing the quality of life of persons with communication disorders. To meet this mission, the program emphasizes the importance of scientific study, critical thinking skills, interdisciplinary collaboration, ethical principles, the responsibility to educate the public about communication disorders, and the importance of continued professional development throughout one’s career.

This course supports the following Communication Sciences and Disorders Program Learning Outcome (PLO):

I. The student will demonstrate knowledge of major anatomical structures utilized in the communication process.
II. The student will demonstrate knowledge of physiological processes utilized in communication.
III. The student will recognize and articulate the foundational skills related to normal speech and language development.
IV. The student will demonstrate an understanding of the process of assessing and treating communication disorders.
V. The student will analyze, interpret, and synthesize evidence-based procedures in the treatment of communication disorders.
VI. The student will demonstrate professional writing skills appropriate for clinical management.
This course addresses the following standards of the Council for Clinical Certification of the American Speech-Language Hearing Association (2020 Standards effective Jan 1, 2020):


**Standard IV-B:** The applicant must have demonstrated knowledge of basic human communication and swallowing processes, including the appropriate biological, neurological, acoustic, psychological, developmental, and linguistic cultural bases. The applicant must have demonstrated the ability to integrate information pertaining to normal and abnormal human development across the life span.

**Course-specific learning objectives** - Upon completion of this course, students will:

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>ASHA CFCC Standard</th>
<th>Assignment</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate basic understanding of simple and complex sounds and their analysis</td>
<td>IV-B</td>
<td>Classroom Lecture and Group Discussion</td>
<td>Exams, labs</td>
</tr>
<tr>
<td>Characterize the acoustic characteristics of vowels and consonants</td>
<td>IV-B</td>
<td>Classroom Lecture and Group Discussion; Project</td>
<td>Discussions; Exams; Labs</td>
</tr>
<tr>
<td>Describe anatomical and physiological bases of respiration, phonation, articulation, hearing, and the nervous system</td>
<td>IV-B</td>
<td>Classroom Lecture and Group Discussion</td>
<td>Exams; Labs</td>
</tr>
<tr>
<td>Become familiar with the appropriate recording (acoustics) procedures and relevant software for clinical use</td>
<td>IV-B</td>
<td>Classroom Lecture and Group Discussion; Project</td>
<td>Paper; Exams</td>
</tr>
</tbody>
</table>

**III. Course Assignments, Activities, Instructional Strategies, use of Technology:**

Each ZOOM synchronous class period will consist of either a lecture or discussion format, with some sessions culminating in group activities and/or practice of course components. Open discussion of topic materials and questions are greatly encouraged. Please be an active consumer of this course. Read required chapters and peer-reviewed publications ahead of time and come prepared to discuss them in class. Ask questions, be willing to share experiences, and express concerns. Audiovisual stimuli and other electronic media will be utilized to foster knowledge acquisition of the study area. This course will employ aspects of distance learning technology which will include video presentations and correspondence online. Please download and install the following free software Praat: Doing Phonetics by Computer https://www.fon.hum.uva.nl/praat/

Select the appropriate one based on your operating system. You will need to bring your laptop to class to better understand how this software works.
IV. Evaluation and Assessments (Grading):

Calculation of grades. Your overall point value will determine your letter grade as described:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1 – Basics of Sound (Ch.1-3)</td>
<td>25</td>
</tr>
<tr>
<td>Exam 2 – Articulation I – Vowels and Diphthongs (Ch.7)</td>
<td>25</td>
</tr>
<tr>
<td>Exam 3 – Articulation II – Consonants (Ch.8)</td>
<td>25</td>
</tr>
<tr>
<td>Exam 4 – Respiration (Ch.4)</td>
<td>25</td>
</tr>
<tr>
<td>Exam 5 – Phonation (Ch.5,6)</td>
<td>25</td>
</tr>
<tr>
<td>Exam 6 – Prosody &amp; Theories (Ch.9-11)</td>
<td>25</td>
</tr>
<tr>
<td>Exam 7 – Instrumentation (Ch.12)</td>
<td>25</td>
</tr>
<tr>
<td>Labs using software</td>
<td>100</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
</tr>
<tr>
<td>Research Paper (Graduate Students only)</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>375/475</strong></td>
</tr>
</tbody>
</table>

Grades will be assigned as follows (per SFASU regulations):

A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69% and F = Below 60%

Grade points are listed above and the grade you receive in the course will correspond to the letter grade shown. If you receive a .5 or higher in the course (e.g., 89.50 – 89.99), I will round your grade up to the next letter grade. I **WILL NOT** round your grade if you receive a .4 or lower in the course (e.g., 89.0 – 89.499). No exceptions. **There are no extra credit opportunities for this class.**
V. Tentative Course Outline/Calendar:*

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intro to Sound</td>
<td>Ch1-3</td>
</tr>
<tr>
<td>2</td>
<td>Sound waves</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Lab-Review-Exam</td>
<td>Lab 1 Exam 1</td>
</tr>
<tr>
<td>4</td>
<td>Articulation - I</td>
<td>Ch 7 Lab2</td>
</tr>
<tr>
<td>5</td>
<td>Articulation - II</td>
<td>Ch 8 Lab3, Exam 2</td>
</tr>
<tr>
<td>6</td>
<td>Review</td>
<td>Exam 3</td>
</tr>
<tr>
<td>7</td>
<td>Breathing</td>
<td>Ch 4</td>
</tr>
<tr>
<td>8</td>
<td>Breathing, Lab</td>
<td>Lab 4, Exam 4</td>
</tr>
<tr>
<td>9</td>
<td>Phonation</td>
<td>Ch 5</td>
</tr>
<tr>
<td>10</td>
<td>Phonation, Lab</td>
<td>Ch 6, Lab 5, Exam 5</td>
</tr>
<tr>
<td>11</td>
<td>Prosody</td>
<td>ch 9,</td>
</tr>
<tr>
<td>12</td>
<td>Theories, Lab</td>
<td>Lab 6, Exam 6</td>
</tr>
<tr>
<td>13</td>
<td>Thanksgiving</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Instrumentation</td>
<td>Lab 7</td>
</tr>
<tr>
<td>15</td>
<td>Review for Final Exam</td>
<td></td>
</tr>
</tbody>
</table>

*Course Outline subject to change. Any changes/modifications made will be discussed in class/online.

VI. Readings (Required and recommended—including texts, websites, articles, etc.):

Required:


VII. Course Evaluations:

Near the conclusion of each semester, students in the College of Education electronically evaluate courses taken within the Perkins COE. Evaluation data is used for a variety of important purposes including: 1. Course and program improvement, planning, and accreditation; 2. Instruction evaluation purposes; and 3. Making decisions on faculty tenure, promotion, pay, and retention. As you evaluate this course, please be thoughtful, thorough, and accurate in completing the evaluation. Please know that the Perkins COE faculty is committed to excellence in teaching and continued improvement. Therefore,
your response is critical! In the Perkins COE, the course evaluation process has been simplified and is completed electronically through MySFA. Although the instructor will be able to view the names of students who complete the survey, all ratings and comments are confidential and anonymous, and will not be available to the instructor until after final grades are posted.

VIII. Student Ethics and Other Policy Information:

From the instructor: This is a virtual class offered in a synchronous format. To enhance student participation and to assess your commitment, your camera should be turned on at all times. You will be assigned to groups for lab work. Each time you may have a different partner. Please be courteous and cooperate with your group member. Put in equal effort and earn your grade.

Class Attendance and Excused Absence: Policy 6.7
Regular, punctual attendance, documented participation, and, if indicated in the syllabus, submission of completed assignments are expected at all classes, laboratories, and other activities for which the student is registered. Based on university policy, failure of students to adhere to these requirements shall influence the course grade, financial assistance, and/or enrollment status. The instructor shall maintain an accurate record of each student’s attendance and participation as well as note this information in required reports (including the first 12-day attendance report) and in determining final grades. Students may be excused from attendance for reasons such as health, family emergencies, or student participation in approved university-sponsored events. However, students are responsible for notifying their instructors in advance, when possible, for excusable absences. Whether absences are excused or unexcused, a student is still responsible for all course content and assignments. Students with accepted excuses may be permitted to make up work for up to three weeks of absences during a semester or one week of a summer term, depending on the nature of the missed work. Make-up work must be completed as soon as possible after returning from an absence.

Late Quizzes/Tests and Assignments:
If you are ill when a lab/exam is scheduled, be sure to leave a message via email at radhakrin@sfasu.edu Without prior notice, students WILL NOT be able to make-up a missed lab/exam (Doctor’s note or other approved confirmation for missed lab/exam).

Acceptable Student Behavior:
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate or inappropriate in the classroom. This includes inappropriate use of laptop computers or “surfing the web” during class time and/or texting using cellphones. If this type of activity occurs, those students will lose the privilege of bringing that device to class for the remainder of the semester, period.
Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

**Academic Accommodation for Students with Disabilities: Policy 6.1 and 6.6**

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 936-468-3004 as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/)

**Academic Integrity:**

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.
**Penalties for Academic Dishonesty**

Penalties may include, but are not limited to, reprimand, no credit for the assignment or exam, re-submission of the work, make-up exam, failure of the course, or expulsion from the university.

**Student Appeals**

A student who wishes to appeal decisions related to academic dishonesty should follow procedures outlined in Academic Appeals by Students (6.3).

**Withheld Grades: Policy 5.5**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to [https://www.sfasu.edu/policies/course-grades-5.5.pdf](https://www.sfasu.edu/policies/course-grades-5.5.pdf).

**Student Code of Conduct: Policy 10.4**

Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program. Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This policy applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the iCare: Early Alert Program at SFA. Information regarding the iCare program is found at [http://www.sfasu.edu/judicial/earlyalert.asp](http://www.sfasu.edu/judicial/earlyalert.asp) or call the office at 936- 468-2703.

**Respect for Diversity:**

The Speech-Language Pathology program embraces a notion that students from all diverse backgrounds and perspectives be well served by this course, that students’ learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, religion, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

**IX. Other Relevant Course Information:**

Communication for this course will be delivered through D2L. Communication between the students and instructor will be via D2L and email. Please check D2L and your SFASU email often to get announcements, print out handouts, check your grades, etc. Not checking your emails will lead to missing important relevant information.
Emergencies; Traumatic Events:
If you have experienced any of the following in the past, or are experiencing any of the following currently, please know that you are not alone:

- Sexual assault
- Intimate partner violence
- Stalking
- Sexual harassment
- Other traumatic experience

We are a family here at SFA and it is my responsibility as your professor to do my best to get you connected with the services you might need. It doesn’t matter if it is something that occurred many years ago or is recent, there are resources available to you at no cost or significantly reduced cost. Services can be provided in person and also through ZOOM.

If you are having a crisis and need assistance, please call:
911 or local hospital
National Suicide Prevention Hotline: 800-273-8255; 800-273-TALK or 800-SUICIDE Burke 24-hour Crisis Line
(Local Mental Health Authority): 800-392-8343
The Trevor Project (LGBTQ+ sensitive) 24/7 Hotline: 1-866-488-7386 and/or
TrevorText (text START) to 678678 Crisis Text Line by texting HELLO to 741-741
Veterans Crisis Line: 800-273-8255 (press 1)
Trans-Hotline: 1-877-565-8860

Human Services Counseling Clinic (HSCC) [http://www.sfasu.edu/humanservices/](http://www.sfasu.edu/humanservices/)
The SFASU Counseling Clinic is a service provided by the Department of Human Services Counselor Education Programs located on the SFASU Campus in Human Services Building, Room 202. If you have questions or concerns, the HSCC can be reached by phone between the hours of 8am and 6pm Monday-Thursday at 936-468-1041. In response to the COVID-19 viral pandemic, the HSCC has temporarily waived all clinic fees.

Veterans Resource Center [http://www.sfasu.edu/vrc/](http://www.sfasu.edu/vrc/)
Located on the first floor of the Student Center cafeteria: 936-468-6494. They are open Monday through Friday, 8am to 5pm and provide a comprehensive list of services, which include counseling services. Email: SFAVeterans@sfasu.edu

The Family Crisis Center of East Texas has partnered with SFASU for an on-campus outreach office - Located on the third floor of the McKibben Education Building, Suite 304: 936-468-SAFE (7233). They provide confidential services and support for victims of domestic violence and sexual assault. Includes services for personal advocacy, safety planning, legal advocacy, sexual assault advocacy, counseling, child advocacy, self-sufficient advocacy.

Rusk Counseling [http://www.sfasu.edu/counselingservices/](http://www.sfasu.edu/counselingservices/)
Counseling services for all students – offers distance counseling. Located on the 3rd floor of the Rusk Building: 936-468-2401; email: counseling@sfasu.edu. Office hours are Monday through Friday from 8am to 5pm. Includes all counseling services (bilingual English-Spanish services also available).

As your professor, I am here for you and want you to get the help you need. If you would like to contact me and discuss anything, please do not hesitate to do so. If you tell me of an incident or situation whether past or present that falls under circumstances related to physical, sexual, emotional violence, I may be required (dependent on incident) to report it to Title IX office on campus. It does not go against you, it’s confidential, and your protection is of utmost importance. They simply reach out to you in an email to see if you need any support and you decide whether to take it from there.