

**SPEECH SCIENCE**  
**COMD 5070 -- Fall Semester 2007**  
**Tuesday, Thursday 1:30-2:45pm 3 semester hours**

**PROFESSOR:** Kim Corbin-Lewis, Ph.D.    **OFFICE HOURS:** Tuesday, 12:00 - 1:00 or by appointment  
**OFFICE:** Communicative Disorders 108    **PHONE:** 797-1302  
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**PREREQUISITES:** COMD3100    Anatomy and Physiology of the Speech Mechanism

**COURSE DESCRIPTION**

This course is designed for upper division undergraduate speech-language pathology and audiology majors to be taken following COMD 3100. The focus is on providing a conceptual framework from which to view normal and disordered speech perception and production. The course builds on the knowledge base established in Anatomy and Physiology of the Speech Mechanism and introduces the measurement of physiologic and acoustic events of speech perception and production. This course will identify and explore the clinical measurement of perception and production characteristics of the respiratory, laryngeal, articulatory, resonatory, and auditory system events. The functionally integrative nature of these systems, or subsystems, as they perceive sound and produce speech will be stressed. This course will provide the foundation of normal perception and production characteristics and measurement values that are the point of comparison when dealing with disordered function across populations and the lifespan. Demonstration of instrumental measurement will be integrated into class periods.

**COMPETENCIES**

Following successful completion of this course the student will be able to:

- \*Answer the question "How do we produce speech?"
- \*Answer the question "How do we perceive speech"?
- \*Describe how the anatomy and physiology of the head, neck, and chest wall work synergistically to produce speech (KASA IIIA)
- \*Describe the physical attributes of sound (KASA IIIA)
- \*Appreciate the complexity of the nervous system and its contribution to speech and language production (KASA IIIB)
- \*Explain laryngeal function as an acoustic, aerodynamic, and biomechanical event. (KASA IIIB)
- \*Explain the aerodynamic events of the chest wall during speech breathing in terms of pressure, volume, flow, and kinematic events (KASA IIIA, IIIB)
- \*Explain articulatory movements and their representation in the time and frequency domains for consonant and vowel production (KASA IIIB)
- \*Explain resonatory characteristics of the speech mechanism (KASA IIIB)
- \*Explain current theories of speech perception and production

### ASHA Knowledge and Skills Acquisition (KASA) Requirements for Certification in SLP

ASHA Standard	Student will demonstrate:	Class Assignment	Portfolio Evidence	Evaluation Criteria
III A	The (student) must demonstrate knowledge of the principles of: <i>biological sciences, physical sciences</i> , mathematics, and social/behavioral sciences	Assigned readings/lecture	Graded exams/quizzes	Instructor grading
III B	The (student) must demonstrate knowledge of basic human communication and swallowing processes, including their <i>biological, neurological, acoustic</i> , psychological, <i>developmental</i> , and <i>linguistic</i> and <i>cultural</i> bases	Assigned readings/lecture	Graded exams/quizzes	Instructor grading

If you enter a graduate degree program in speech-language pathology or audiology, the above competencies are viewed as essential skills. It is the intent of this course to enable you to meet those basic requirements. If you are having difficulty establishing these competencies please see me, *as early as possible in the semester*. It is your responsibility to seek extra help if you need it. I encourage you to call my office or e-mail me and setup an appointment so we can discuss questions you might have, clarify any course content misconceptions, and assist in your understanding of the material. My primary goal is to have each individual in the course succeed.

#### REQUIRED TEXT

Ferrand, Carole, T. Speech Science: An Integrated Approach to Theory and Clinical Practice, Second Edition. Allyn & Bacon, 2007.

#### EVALUATION

**ALL WORK IN THIS CLASS IS INDIVIDUAL AND AIMED AT HELPING YOU REACH SPECIFIC COMPETENCIES – NONE OF THE “EVALUATION” ITEMS ARE TO BE COMPLETED AS A GROUP PROJECT**

Class Participation/Quiz Scores - 20%

Attendance is expected though not checked. It will be impossible to participate during class and take quizzes (and therefore earn your 20%) if you are absent. You are strongly encouraged to actively participate in the course, to ask questions, volunteer for demonstrations, and join discussions. In addition, there will be a minimum of five pop quizzes on the reading and lecture material during the semester. While most people do not look forward to this, it does encourage students to remain current in their reading and reviewing of their notes. This is extremely important since much of the material builds upon previous topics covered. If you are absent, the zero you receive for that quiz will be averaged into your other quiz scores. Quiz dates are not

announced nor are they set far in advance -- they are scheduled based on class progress and amount of material covered. **Please do not ask if a quiz will be held on a specific day and be aware that there is no such thing as a "makeup" quiz.** In addition to the pop quizzes, you are required to complete the CD quizzes in your text as we complete each assigned chapter. You are allowed to take the quiz as many times as you like to attain the grade that is acceptable to you. When you are satisfied with your quiz grade, please print the final screen with the percentage scored, the number of questions attempted and the number of questions correctly answered. You may either sign your name to the sheet and hand in at the beginning of the class when it is due, or follow the directions on the course BlackBoard page and drop in the assignment dropbox. You will find the due dates below on your calendar.

#### Exams - 80%

Three unit exams will be objective, **non-cumulative** tests. Exam dates will be **tentatively** set at the beginning of the semester (actual dates will be at the professor's discretion and will depend on speed of progress in the class). You must take the exam as scheduled, announced in class at least one week prior to the exam date. There will be accommodations made for university-approved excuses **only**. If an exam is not taken with the class and you do not have a university-approved excuse, you will automatically forfeit 20% of the total points for that test. **There are NO exceptions to this policy.** The final 75-minute unit examination will be held during the assigned final exam period on: **Tuesday, December 11, 2007 at 11:30-12:45pm**. Please notify me ASAP if there are any scheduling conflicts with exams.

***Please be aware that since there are no papers, projects, or assigned group activities in this course, expectations are extremely high for completion of reading assignments, lecture attendance, lecture note review prior to each class, and active participation during class.***

Audio taping of course lectures is allowed; videotaping is not. All exams will be shredded one year from the test date.

Grading in this upper division course is NOT done on a curve. Material presented in this class is essential to becoming a competent professional in the field of communicative disorders and, as such, is viewed as a needed knowledge base. The following University-approved grading scale will be used:

93-100 = A  
 90-92 = A-  
 87-89 = B+  
 83-86 = B  
 80-82 = B-  
 77-79 = C+  
 73-76 = C  
 70-72 = C-  
 60-69 = D  
 < 60 = F

## READING ASSIGNMENTS

Scheduled topic dates are TENTATIVE and will depend on the progress of the class as a whole. *Please have the assigned chapter read, and PowerPoint outlines reviewed, before the class in which it is scheduled for presentation.* This will facilitate your learning the material. Any change to this schedule will be announced in class and is at the discretion of the professor.

Lecture outlines in PowerPoint will be available on BlackBoard ( <http://bb.usu.edu> ) at least one week before the lecture is presented.

Week	Dates	Topic
1	28 August	Ch 1 Introduction (pp. 1-6) Ch 2 Nature of Sound (pp. 7-49) Ch 2 (continued)
	30-August	<b>Ch 1 CD quiz due</b>
2	4-September	Ch 2 (continued) Ch 3 Clinical Application of Frequency & Intensity Variables (pp. 50-67)
	6-September	<b>Ch 2 CD quiz due</b>
3	11-September	Ch 3 (continued) Ch 4 Respiratory System (pp. 68-101)
	13-September	<b>Ch 3 CD quiz due</b>
4	18-September	Ch 4 (continued) Ch 4 (continued)
	20-September	<b>Ch 4 CD quiz due</b>
5	25-September	Ch 5 Clinical Application: Respiratory Breakdowns that Affect Speech Production (pp. 102-114)
	27-September	Ch 6 Phonatory System (pp.115-155) <b>Ch 5 CD quiz due</b>
6	2-October	<b>Exam #1 on Ch. 2, 3, 4 &amp; 5</b>
	4-October	Ch 6 (continued)
7	9-October	Ch 6 (continued) Ch 6 (continued)
	11-October	
8		Ch 7 Clinical Application: Measures of Jitter, Shimmer, & Quality (pp. 156-166)
	16-October	<b>Ch 6 CD quiz due</b>

		Ch 8 Articulatory System (pp. 167-231)
	18-October	<b>Ch 7 CD quiz due</b>
<b>9</b>	23-October	Ch 8 (continued)
	25-October	Ch 8 (continued)
<b>10</b>	30-October	Ch 8 (continued)
		Ch 8 (continued)
	1-November	<b>Ch 8 CD quiz due</b>
<b>11</b>	6-November	Ch 9 Clinical Application: Breakdowns in Production of Vowels and Consonants (pp. 232-249)
		Ch 9 (continued)
	8-November	<b>Ch 9 CD quiz due</b>
		<b>Exam #2 on Ch. 6, 7, 8 &amp; 9</b>
<b>12</b>	13-November	
	15-November	Ch 10 The Auditory System (pp. 250-284)
<b>13</b>	20-November	Ch 10 (continued)
		Thanksgiving Holiday – NO CLASS
	22-November	<b>Ch 10 CD quiz due</b>
<b>14</b>	27-November	
		Ch 11 Clinical Application: Perceptual Problems in Hearing Impairment, Language & Reading Disability, & Articulation Deficits (pp. 285-299)
	29-November	
<b>15</b>	4-December	Ch 13 Clinical Application: Brain Function Measures (pp. 367-382)
		<b>Ch 11 CD quiz due</b>
		Ch 14 Models & Theories of Speech Production & Perception (pp. 384-404)
	6-December	<b>Ch 13 CD quiz due</b>
<b>Final:</b>	<b>Tuesday 11-Dec</b>	<b>Final non-cumulative Exam 3 on Ch 10, 11, 13, &amp; 14</b> 11:30-12:45pm <b>Ch 14 CD quiz due</b>

### University Standards of Academic Integrity - "The Honor System"

<http://www1.usu.edu/aia/ACADEMIC/syllabusres.cfm#honor>

Each student has the right and duty to pursue his or her academic experience free of dishonesty. The Honor System is designed to establish the higher level of conduct expected and required of all Utah State University students.

*The Honor Pledge:* To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I

pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

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**Plagiarism** <http://www1.usu.edu/aia/ACADEMIC/syllabusres.cfm#plagiarism>

Plagiarism includes knowingly "representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." The penalties for plagiarism are severe. They include warning or reprimand, grade adjustment, probation, suspension, expulsion, withholding of transcripts, denial or revocation of degrees, and referral to psychological counseling.

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**Sexual Harassment** <http://www1.usu.edu/aia/ACADEMIC/syllabusres.cfm#harass>

Sexual harassment is defined by the Affirmative Action/Equal Employment Opportunity Commission as any "unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature." If you feel you are a victim of sexual harassment, you may talk to or file a complaint with the Affirmative Action/Equal Employment Opportunity Office located in Old Main, Room 161, or call the AA/EEO Office at 797-1266.

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**Students with Disabilities** <http://www1.usu.edu/aia/ACADEMIC/syllabusres.cfm#disabilities>

The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (797-2444), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

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## **Withdrawal Policy and "I" Grade Policy** <http://www1.usu.edu/aia/ACADEMIC/syllabusres.cfm#withdrawal>

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term 'extenuating' circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4) change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor.

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## **Grievance Process (Student Code)**

Students who feel they have been unfairly treated [in matters other than (i) discipline or (ii) admission, residency, employment, traffic, and parking - which are addressed by procedures separate and independent from the Student Code] may file a grievance through the channels and procedures described in the Student Code: <http://www1.usu.edu/aia/ACADEMIC/syllabusres.cfm#grievance>

## **PROFESSIONALISM**

The COMD department is excited to have you as an upper level undergraduate student in pre-professional training for our stimulating and rewarding profession. We take our profession seriously, set high standards, and strive to best prepare you for the challenges ahead in graduate school and the work environment. Please carefully review the following excerpt and incorporate these behavioral expectations (today) in your academic performance.

Chial, M. (1998). Conveying expectations about professional behavior. *Audiology Today*, 10(4), p.25

Speech-language pathology and audiology are professional disciplines. Professions require certain behaviors of their practitioners. Professional behaviors (which may or may not directly involve other people) have to do with professional tasks and responsibilities, with the individuals served by the profession and with relations with other professionals. Included among professional tasks are education and training. The following conveys expectations about the behaviors of those who seek to join this profession.

1. You show up.
2. You show up on time.
3. You show up prepared.
4. You show up in a frame of mind appropriate to the professional task.
5. You show up properly attired.
6. You accept the idea that "on time," "prepared," "appropriate," and "properly" are defined by the situations, by the nature of the task, or by another person.

7. You accept that your first duty is to the ultimate welfare of the persons served by your profession, and that “ultimate welfare” is a complex mix of desires, wants, needs, abilities and capacities.
8. You recognize that professional duties and situations are about completing tasks and about solving problems in ways that benefit others, either immediately or in the long term. They are not about you. When you are called upon to behave as a professional, you are not the patient, the customer, the star, or the victim.
9. You place the importance of professional duties, tasks and problem solving above your own convenience.
10. You strive to work effectively with others for the benefit of the person served. This means you pursue professional duties, tasks and problem solving in ways that make it easier (not harder) for others to accomplish their work.
11. You properly credit others for their work.
12. You sign your work.
13. You take responsibility for your actions, your reactions, and your inaction. This means you do not avoid responsibility by offering excuses, by blaming others, by emotional displays, or by helplessness.
14. You do not accept professional duties or tasks for which you are personally or professionally unprepared.
15. You do what you say you will do. By the time you said you would do it. To the extent you said you would do it. And to the degree of quality you said you would do it.
16. You take active responsibility for expanding the limits of your knowledge, understanding, and skill.
17. You vigorously seek and tell the truth, including those truths that may be less than flattering to you.
18. You accept direction (including correction) from those who are more knowledgeable or more experienced. You provide direction (including correction) to those who are less knowledgeable or less experienced.
19. You value the resources required to perform professional duties, tasks, and problem solving, including your time and that of others.
20. You accord respect to the values, interests, and opinions of others that may differ from your own, as long as they are not objectively harmful to the persons served.
21. You accept the fact that others may establish objectives for you. While you may not always agree with those goals, or may not fully understand them, you will pursue them as long as they are not objectively harmful to the persons served.
22. When you attempt a task for the second time, you seek to do it better than you did it the first time. You revise the ways you approach professional duties, tasks, and problem solving in consideration of peer judgments of best practices.
23. You accept the imperfections of the world in ways that do not compromise the interests of those you serve, or your own pursuit of excellence.
24. You base your opinions, actions, and relations with others upon sound empirical evidence, and upon examined personal values consistent with the above.
25. You expect all of the above from other professionals.