

CMSD 3010

FUNDAMENTALS OF SPEECH AND VOICE SCIENCE - I

FALL 2006 M,W 2:30 – 3:45 AM ADERHOLD G-5 (3 HRS)

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⇒COURSE OVERVIEW

Fundamentals of Speech and Voice Science - I is a lecture-style course designed to provide the student with a fundamental, integrative and thorough understanding of the basic scientific principles and related anatomical structures associated with speech and vocalization. Specific topics covered during this course include the structural organization (anatomy), function (physiology), biomechanical, acoustical, and mathematical properties of vocal tract systems, up through and including the laryngeal system. There are no pre-requisites for this course, although a good working knowledge of human biology, physics, and mathematics is always useful.

⇒COURSE OBJECTIVES (ASHA Standard met in parentheses)

- First and foremost...Enjoy what you are learning and become an active participant in the learning process.
- Demonstrate the ability to comprehend, conceptualize, and integrate the basic underlying principles of anatomy and physiology. (III-A)
- Demonstrate comprehension and correct use of standard anatomical terminology. (III-A)
- Understand and use the scientific method to analyze, synthesize and evaluate the operation of the human vocal tract and appreciate the relevance of these scientific principles to functional vocalization and speech in clinical practice. (III-B; III-D)
- Demonstrate the ability to memorize, visually identify, and verbally describe the location and function of all anatomical structures and systems, along with their substructures, deemed important for speech and vocalization. (III-B)
- Appreciate the 3-D structure of the human vocal tract and how different areas of the system are related to one another during normal speech and vocalization. (III-B)
- Be able to analyze and describe the selection, sequencing, and timing of articulatory systems to produce intelligible speech. (III-C)
- Be able to describe the selection and sequencing of systems involved in non-speech behaviors such as chewing and facial gestures. (III-C)
- Intuitively understand & synthesize together the mathematical & physical principles of vocalization with knowledge of the structural components of the human vocal tract. (III-B)
- Appreciate the comparative diversity of human vocal tract physiology as it pertains to vocalization in different age group populations, across gender, and within select disordered subject groups. (III-D)

- Understand and demonstrate the ability to analyze, synthesize, and evaluate the importance of relations that exist between vocal tract muscular systems, and vocal tract structural tissues (cartilage, bone, connective). (III-B; III-C)
- Be able to analyze and evaluate the importance and relation between muscular subsystems of the human vocal tract that work to produce changes in vocal tract shape, sound pressure, and airflow during speech. (III-B; III-C)
- Be able to describe and evaluate a constellation of tools and techniques that are used today to investigate normal and disordered speech. (III-F)
- Be able to synthesize your knowledge of (1) normal anatomy and physiology of the human vocal tract and (2) your understanding of quantitative analyses methods to appreciate more fully the pathophysiology of speech and non-speech disorders. (III-D)

WebCT

- WWW: Open your preferred web browser and go to the following URL: <https://webct.uga.edu/> You must have the “**UGA MyID**” to access WebCT. For those students who do not have a “UGA MyID” yet, you can quickly create one at <http://www.uga.edu/myid> . Check your WebCT e-mail frequently for class announcements.

⇒REQUIRED TEXTBOOKS & READINGS

1. Ferrand (2007). **Speech Science: An Integrated Approach to Theory & Clinical Practice (2nd ed.)**, Allyn & Bacon Publishing.
2. Zemlin, W.R. (1998). **Speech and Hearing Science: Anatomy and Physiology, (4th edition)**. Allyn & Bacon Publishing.
3. Selected readings and graphics will be on reserve in the Office of Instructional Technology [OIT] (2nd Floor Aderhold) for you to copy.
4. Internet connectivity and e-mail access.
5. Lecture outlines will be available for you to download from our course website on WebCT.
 - The purpose of these outlines is to provide you some *help* in following the lecture and improving your real-time comprehension of the material.
 - Outlines will generally be available the evening before a scheduled lecture or lecture series.
 - **A word of advice:** The lecture outlines constitute a useful aide (hopefully) for lectures and are *not* a substitute for your class attendance.
 - The outlines are just that, ...“outlines”. They do not all of the material (lecture or graphics) presented in class.
 - I encourage you to actually physically write notes during class. Those who do this tend to do better than average.

⇒ GRADING & ASSESSMENT PROCEDURES

Exams

- A total of **FOUR** exams will be administered. The first three exams are each worth 70 points, while the final exam is worth 85 points. As for your final exam, it will be exactly like the previous 3, except for a 15 point essay section that will ask you to write upon a series of integrative questions that span the course of the semester.
- All exams will typically include the following types of questions; *multiple choice, fill-ins, matching, brief essays, true-false, labeling figures, some simple figure or flowchart drawing, etc.* Exam questions will be derived from my lectures, outlines, textbook readings, and any outside readings that are assigned. You will have the full class period to complete an exam.
 - BTW, My general answer to the most often asked question, "What's on the exam?" ...is usually, ... "Everything".
 - Because speech is so interactive and complex, all the information we do in class is equally important, but in different ways and to differing degrees.
 - This course is VERY additive in that your understanding of new concepts depends strongly on your understanding and retention of past material.
 - You have to know it all to be able to understand the dynamics of the system.

Exam 1 (70 pts)	September 13 th
Exam 2 (70 pts)	October 2 nd
Exam 3 (70 pts)	November 8 th
Exam 4 (85 pts)	December 11 th - 3:30 - 6:30 pm

Exam dates are subject to change at the discretion of the instructor.

Homework Assignments

- **Four 15 point homework assignments** will be administered throughout the semester.
- You will be allowed to drop your lowest HW assignment grade.
- The final HW grade will be the total points of your three best HW's.
- HW assignments will consist of computational problem sets, written responses to questions, applied experiments and various other assignments that fit with the topic currently under discussion
- The assignments are designed to help you practice and review important concepts and information. They are an important pedagogical tool and help prepare you for the exams. Please take them seriously.
- Homework assignments are to be completed individually and only using your lecture notes, WebCT outlines and assigned readings (see ***Note** below).
- Homework assignments will generally be due the next class meeting after it is assigned, but this is flexible and we can negotiate this point between all of us.
- Late assignments (after we have set a due date) will not be accepted.

* **Note:** Submission of your completed homework to me signifies that the academic work presented in your responses represents your individual effort and thought with no assistance from any out-of-bounds sources.

⇒FINAL GRADES

- The course is graded on a linear whole-number point scale rather than on percentages. Please do not translate your point score into a percentage. The main reason I use a point scale is to try and avoid the dreaded “*rounding up or down*” issue associated with percentages.
- As such, your final grade for this course will be based on a grand total of **400 points** summed across all of your *exam scores (210 pts)*, your *homework points (45 pts)*, the *research paper (20 pts)*, your *participation score (10 pts)*, *pop quiz score (30 pts)*, and the *final exam (85 pts)*. Point totals will be translated into letter grades as follows:

A =	368 POINTS AND ABOVE
A- =	360-367
B+ =	352-359
B =	328-351
B- =	320-327
C+ =	312-319
C =	288-311
C- =	280-287
D =	240-279
F =	230 POINTS AND BELOW

⇒COURSE POLICIES SPECIFIC TO THIS CLASS

- Those students with documented special needs (such as cognitive, learning or physical handicaps), please see me during the first few days of class so that we may discuss your case and plan any modifications to the course that may be necessary.
- A grade of C or better is required in order for this course to count toward your completion of a degree in Communication Sciences and Disorders.
- Midpoint withdrawal deadline is Monday, October 9th.
- There are no extra-credit assignments provided, even if your final course score is 1 point away from a breakpoint on the grading scale.
- Attendance at all lectures is expected from everyone.
- You are responsible for obtaining copies of any class notes or handouts that were presented and distributed on a day you were absent.
- Finally, please be sure to turn off the ringers on your cell phones. Instead, program your cells for vibration mode.

⇒ILLNESS AND ABSENCE POLICY FOR EXAMS

- At the discretion of the instructor, make up exams will be given in cases of documented illnesses and/or emergencies. Documentation must be in the form of an excuse slip or written note from the Health Center or your personal physician, respectively.
- In case you are ill or have an emergency, please let me know your status *within 48 hours after* the missed exam date by e-mail or in person.

- Any notification after the 48 hour period will not be accepted and you will not be able to make up the missed exam. Please don't let this happen.
 - Make up exams will also be provided for students who observe religious holidays.
 - To make up an exam, you must inform me of your absence *48 hours prior* to the exam date. We can arrange a mutually agreeable time for your make up.
 - If you inform me of your religious observance after the exam though, you will not be allowed to make up the exam unless you have a tremendously good excuse. Accepting this excuse and providing a makeup exam is up to the discretion of the instructor.

⇒ ACADEMIC HONESTY & INFORMATION

- Let me start off by saying that the following information is **not** meant to scare you but rather to inform you, so you and I can avoid misunderstandings that pertain to your work.
 - Part of your training in CSD involves understanding ethics and ethical behavior in practice and research. Information on academic honesty is the first step toward this goal.
- As a member of this class and a student at UGA, you are honor bound to observe and demand academic honesty and integrity from yourself and those around you.
- The University of Georgia's Policy on Academic Honesty will be STRICTLY followed for this course. In summary, all students are responsible for maintaining the highest standards of honesty and integrity in every phase of their academics. The penalties for academic dishonesty are severe and *ignorance is not an acceptable defense*. All students are responsible for informing themselves about UGA's academic honesty standards before performing any academic work. You can familiarize yourself with the UGA Academic Honesty Policy by referring to the following web page for details:
 - http://www.uga.edu/ovpi/academic_honesty/academic_honesty.htm
- As recommended by UGA's Office of Vice President for Instruction, a few examples of academic dishonesty specific to this course are offered:
 - Using references or detailed information from the internet without properly crediting or citing original authorship, or passing information off as your own original work.
 - Working collaboratively with other students to develop and complete homework. In other words, two or more students working together to come up with a single argument that each person then uses for their own assignment.
 - Knowingly ignoring someone else's dishonesty by not reporting the transgression.
- Please refer to your current student bulletin and the Fall 2006 Schedule of Classes for details about drop/add, course withdrawal policies and procedures, and any other general UGA academic policies.

⇒ EXPECTATIONS

- Always remember
 - "Don't study harder,...*Study smarter!*".
- Take responsibility for your own learning. Be proactive by:
 - Seeking out help early when something is not clicking,
 - Introducing yourself to me and being sure to come to office hours,
 - Seeking out study partners,
 - Brainstorming different ways for you to take notes in class or study for assignments,
 - Challenging yourself to integrate information as much as possible across **ALL** of your CMSD classes.

- I will be expecting you to:
 - Think about and integrate the information we are working on, not simply memorize it.
 - Evaluate the context in which that information was presented to you,
 - Be able to explain clearly how information fits together with other things we are learning.
- ASK QUESTIONS IN CLASS. I cannot emphasize this suggestion enough.
 - There is NO such thing as a stupid or silly question, so..... Please ask if something related to the lecture is not clear in your mind.
- You will be expected to have mastery of anatomical sites, labels, terminology, and basic principles of those topics we have previously covered.
 - This course is VERY additive in that your understanding of new concepts depends strongly on your understanding and retention of past material.
- College level organization, grammar, punctuation, syntax, etc. are expected from all students on any form of writing assignment.
- I hope that when you finish this course you are,
 - Reading differently,
 - Writing differently,
 - Thinking differently,
 - Organizing your time differently, and
 - Acting differently.

⇒ TOPIC SCHEDULE AND READINGS

- Topic coverage is flexible and strongly influenced by the pace of the class. Changes in the format and pace of the course during the semester are up to the discretion of the instructor.
- The course syllabus is only a **general plan** for the semester and deviations announced to the class by the instructor (either verbally, through e-mails and/or through postings on the course website) may be necessary as the semester progresses.
- Consult the course website **frequently** for updates and/or announcements.
- Specific reading assignments will be posted on the course website and/or announced in class.
- Outside readings and graphics (if assigned) may be found on reserve in OIT (2nd Floor Aderhold). Please return the master copies of the readings and graphics to their place of origin after you have copied them, as a courtesy to your fellow classmates.
- Spring semester topics will continue from the point that we leave off at the end of the Fall semester and will include coverage of the remaining vocal tract systems of speech articulation and resonance.

Fall Semester Topics	<i>Write your reading assignments here.</i>
❖ Syllabus, Study Tips, and Introductions to the Speech and Voice Sciences.	
❖ Getting to know your vocal tract.	
❖ What are models, theories and the Scientific Method?	
❖ Speech: A robust and complex signal.	
❖ Basic elements of anatomy.	
❖ Basic principles of neuroscience and neural signaling.	
❖ Gross structure of the human nervous center.	
❖ Muscle physiology and biomechanical principles of movement.	
❖ Respiratory anatomy.	
❖ Principles of pressure & flow.	
❖ Respiratory physiology.	
❖ Laryngeal anatomy.	
❖ Laryngeal and voice physiology.	
❖ Other:	

⇒SOME FRIENDLY SUGGESTIONS AND STUDY TIPS TO HELP YOU SUCCEED

- Read and use your syllabus – read it thoroughly and refer to all parts of it often, not just the list of dates and assigned stuff.
 - The syllabus includes lots of useful and necessary information about the class, including such things as grading rubrics, hints for success, and explicit and implicit information about the instructor’s assumptions and expectations.
- Download the notes from WebCT and review them prior to class.
- Always be prepared and ready to answer questions during any given class.
- Actively take notes in class.
 - Don’t rely on the outlines as your *only* source of lecture information.
 - Like I said before, the key word here is “outline”, ...these handouts are simply a skeleton of the lectures. Your job during class is to elaborate upon the outlines.
- During lecture and when you study, ask yourself “questioning” questions
 - What connections does my instructor want me to see between this material and other things we’ve discussed or read about?
 - How do these different facts fit together?
 - What is the “big picture” or “binding thread” that my teacher is trying to get me to see?
 - What questions would I ask a researcher or author of my reading if I could talk to her/him directly?”
 - How could I explain the importance of this material to a friend?
- Some note taking suggestions:
 - Use a binder to store your notes and papers. Binders make it easy to put in graphics at the right point in a lecture, or to reorganize your notes to make them work for you.
 - Listen, Think,..and then Write (Nist & Holschum, 2002)
 - DO NOT WRITE EVERY WORD I SAY. It’s important to be selective about what you write in your notes. Paraphrase my lecture materials.
- Remember, that memorizing information is only the first step when you study.
 - When you prepare for an exam, go beyond simply memorizing information, and instead strive for integration, understanding, and comprehension at a deeper “gut” level.

- Ask yourself, “How do the bits of information I’ve memorized, fit together into a way that makes sense?”
- Do the readings and do them before lecture.
 - This way the stuff I lecture on isn’t brand new to you. It is much easier paying attention to a lecture if you have some basic familiarity with what the professor is talking about.
- Practice active reading strategies. By active reading, I mean the following:
 - Taking notes while reading,
 - Summarize notes into paragraph form,
 - Create margin notes in your textbooks,
 - Merge lecture notes with reading notes,
 - Seek out ancillary information with other sources, etc.
- Other studying ideas include:
 - Develop study groups to help quiz each other and fill-in pieces of information from lecture or the readings that you may have missed.
 - Draw lots of your own pictures and flow charts.
 - Make up your own analogies and real-world examples to help you remember the material as you study. (These tend to stick with you for the long haul)
 - Relate new information as much as possible to something you’ve already learned.
 - Pace yourselves by trying to study your anatomy a little everyday in order to keep it fresh in your mind. Trust me, it will be very difficult to cram all this information the night before an exam – like they say, ‘been there, done that 😊.
 - Review past material and notes before tackling new information.
- **Last, (but not least), if your having trouble with the content, get help from me or one of you classmates ASAP! Please, don’t wait !**
 - Feel free to drop-in and visit with me or the GA during posted office hours in order to ask questions, seek tutoring, or discuss any concerns regarding the class.
 - Questions via e-mail are also very much welcomed.
 - If you cannot attend any of the posted office hours, other meeting times may be scheduled with me by appointment only.
 - **Again, be sure to visit my office hours if you are confused or need further explanations.**