SPEECH ACOUSTICS FOR TEACHERS
OF CHILDREN WHO ARE DEAF OR HARD OF HEARING
SPED 5521/6521

Instructor: Heather Gourley, MS, CCC-SLP, LSLS Cert AVEd

Course Dates: July 7–18, 2014 (Mon/Wed/Fri)
Time: 9:30 am – 3:30 pm
Location: TBD
Contact Info: heatherg@usdb.org; (801) 688-5592 text/call

**NOTE: With notification provided to students, the instructor reserves the right to modify this syllabus as needed to meet course objectives**

COURSE DESCRIPTION

This course is designed to introduce students to the anatomy and physiology of the speech mechanism, including the neural basis for speech production. Students will be familiarized with the processes of speech production and how hearing loss in children affects the development of speech production skills. Characteristics of vowels and consonants will be discussed in relation to their acoustic properties for speech. The connection between level of auditory access to specific speech sounds and implications for intervention will be made.

COURSE OBJECTIVES

Upon completion of this course, the student should be able to:

1. Identify and describe the gross anatomy and physiology of the speech mechanism including bone, cartilage, & muscles involved in the processes of speech as well as the central nervous system and peripheral nervous system. Describe the embryonic development of the speech mechanism and the most common speech disorders associated with atypical anatomical and/or physiological development.
2. Complete an oral peripheral examination.
3. Describe the speech processes of respiration, resonation, phonation, and articulation. State the typical concerns in the areas of breath, voice, and articulation for deaf and hard of hearing children.
4. Describe typical speech development as well as atypical characteristics seen in speech & articulation disorders, including association with medical syndromes.
5. Describe vowels by position of the tongue and formants.
6. Describe the distinctive features of consonants in terms of manner, voicing, and place including frequency band information and application to students with hearing impairment.
7. Identify the three dimensions of sound (intensity, frequency, and duration)
8. Explain the role of audition in the development of speech (e.g., auditory feedback loop). Describe the role of early amplification and intervention to the development of speech & auditory neural growth.
9. Discuss the application of the objectives above to the role of the teacher of deaf and hard of hearing students.

REQUIRED READING

There is no required text to purchase for this course; however, journal articles of current research which support evidence-based practice as well as additional supplementary reading/reference materials will be provided. Readings will provide significant background for topics discussed in class & information will be used in assessment as well as assignments and in-class activities. Course material (e.g., powerpoint discussions) will also be taken from the following texts for your reference:


STUDENT RIGHTS & RESPONSIBILITIES

Students are responsible for the content provided in class and are expected to regularly participate. If a student misses class or is late, it is the student’s responsibility to obtain the information presented from another student or the instructor. It is important to note that due to the interactive nature of this course, some activities and/or assignments will be difficult to complete if missed. Instructor reserves the right to provide a comparable alternate assignment as necessary. Cell phones must be off or on “silent” mode during class discussions. Please save web surfing, game playing, texts, calls & emails for breaks which will be provided throughout the day.

The University of Utah is committed to maintaining an atmosphere of intellectual integrity and academic honesty. Students are expected to adhere to the University of Utah Student Code, which covers students’ rights and responsibilities with regard to academic honesty. Any suspicion of academic misconduct (which includes but is not limited to copying homework or exams, misrepresenting someone else’s work as their own or their work as someone else’s, plagiarism, fabrication or falsification of information, facilitating academic misconduct by intentionally helping another to commit an act of academic misconduct, or cheating in any way) may result in a report filed with the Dean of Students. The University Code is available online (http://www.saff.utah.edu/code.htm1).

ACCESS FOR STUDENTS WITH SPECIAL NEEDS

The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Bldg (801) 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.
GRADING

Grades will be determined based upon completion of in-class activities; projects (e.g., oral peripheral examination); quizzes; written assignments; and final exam using the following scale:

- **A**: 94-100
- **A-**: 90-93
- **B+**: 87-89
- **B**: 84-86
- **B-**: 80-83
- **C+**: 77-79
- **C**: 74-76
- **C-**: 70-73
- **D+**: 67-69
- **D**: 64-66
- **D-**: 60-63
- **E**: <60

COURSE OUTLINE

- **Monday, July 7**: Review syllabus / course outline
  - Introduction to speech acoustics
  - Review of Audiogram; ear anatomy; degrees of hearing loss
  - Attributes of Sound

- **Wednesday, July 9**: Anatomy & physiology for the processes of speech including:
  - Respiration; Phonation; Resonance; Articulation
  - Typical development including embryology
  - Atypical development & resultant medical disorders/syndromes

- **Friday, July 11**: Oral peripheral examination
  - International Phonetic Alphabet (IPA)
  - Distinctive features: consonants and vowels
  - Formants & frequency bands
  - Suprasegmentals

- **Monday, July 14**: (continuation of distinctive features; acoustics of speech)
  - Typical speech sound development

- **Wednesday, July 16**: Speech sound disorders (including phonological processes)
  - Speech perception / effects of auditory access on speech acquisition
  - Auditory feedback loop

- **Friday, July 18**: Pulling it all together / Review
  - Application to children with hearing impairment & implications for intervention
  - FINAL EXAM