

SHS 610: Special Topics in Hearing Technology for Young Children

Course Number: SHS 610

Catalog Description: This course is designed to give graduate students hands-on experience with a variety of hearing technologies. It will complement SHS 626, Audiological Assessment and Management of Infants and Young Children and SHS 649, Speech Perception and Production. Invited speakers will include audiologists and industry representatives. Equipment will be demonstrated, current issues will be discussed, and students will be given opportunities to check and troubleshoot equipment.

Course Credit: 1 semester hour

Prerequisites:

Normal language and speech development
Infant Development or Child Development
Anatomy and Physiology of the Speech Mechanism
Anatomy and Physiology of the Hearing Mechanism
Introduction to Audiology
Phonetics
Or permission of the instructor

Co-requisite: SHS 626: Audiological Assessment and Management of Infants and Young Children

I. Course Objectives

Students will achieve growth toward becoming informed, dynamic professionals by demonstrating proficiencies in knowledge comprehension, skill application and dispositions to teaching infants, toddlers and preschool-aged children who are deaf or hard of hearing. The student will:

- A. describe the various hearing technologies available to infants and children with hearing loss.
- B. specify the candidacy for pediatric cochlear implants and discuss possible family concerns.
- C. identify the major components typical of cochlear implants, describe the surgical procedure and processing strategies.
- D. discuss the suitability and ethical issues of cochlear implants for children with a variety of histories and audiological backgrounds, based on current candidacy requirements.
- E. troubleshoot amplification and sensory technology to determine functioning.
- F. discuss best practices and innovations with regard to hearing technology for infants and children with hearing loss

II. Course Content

- A. Hearing technologies for infants and young children
 1. Analog hearing aids
 2. Digital hearing aids
 3. Transposition aids
 4. Bone conduction aids
 5. Tactile devices
 6. Cochlear implants
 7. FM (frequency modulation) systems for home and preschool environments
 8. Wearability issues for young children

- B. Cochlear implant candidacy for infants and young children
 1. FDA approvals and restrictions
 2. Current candidacy criteria
 3. Ethical issues and family concerns
 4. Pre- and post- counseling with families

- C. Cochlear implant systems
 1. Components
 2. Considerations when selecting a cochlear implant
 3. Commitments and precautions
 4. Surgical procedures
 5. Processing strategies
 6. Special tests (e.g., Electrical Stapedial Reflex Thresholds, ESRT; Neural Response Imaging, NRI; Neural Response Telemetry, NRT)
 7. Factors affecting auditory performance with the implant
 8. Cochlear implants and FM systems

- D. Cochlear implants - suitability
 1. Changes in candidacy criteria
 2. Children of various ages with varying degrees of hearing loss
 3. Children with early onset hearing loss implanted after age 5
 4. Bi-lateral cochlear implants and localization
 5. Special populations and considerations
 6. Children transitioning from visual/manual programs
 7. Expectations and counseling
 8. Factors related to performance
 9. Ethical issues

- E. Troubleshooting technology
 1. Hearing aids
 2. FM systems
 3. Cochlear implants

- F. Best practices and innovations
 1. Hearing aids
 2. Earmolds

3. FM systems
4. Cochlear implants

III. Methods of Instruction

- A. Lectures and group discussion
- B. Demonstration lessons (live/video)
- C. Case studies
- D. Laboratory demonstration and practice
- E. Reading assignments and handouts
- F. On-line research

IV. Methods of Evaluation

- A. Attendance 5%
- B. Quality and quantity of class participation (K,S,D) 10%
- C. Written examinations and quizzes (K,S) 40%
- D. Laboratory participation (K,S) 5%
- E. On-line web search and summary (K,S) 10%
- F. Research paper (K,S,D) 25%
- G. Case study audiology report (K,S, D) 5%
- H. Anonymous course evaluations (D)

V. Suggested Texts

Bess, F. H. & Gravel, J. (2006). *Foundations in pediatric audiology*. San Diego, CA: Plural

Kramer, S. (2007). *Audiology: Principles and procedures*. San Diego, CA: Plural.

Northern, J. L. & Downs, M. P. (2002). *Hearing in children* (5th ed.). Baltimore, MD: Lippincott Williams & Wilkins.

VII. Course Format

This course will be taught as a seminar with class discussion, research, student presentations, invited presentations and demonstrations.

Academic Honesty

When cheating is discovered, the faculty member may give the student an F on the work involved or in the course. If further disciplinary action is deemed appropriate, the student should be reported to the dean of students. In addition to being in violation of academic honesty, cheating violates the Code of Student Conduct and may be grounds for probation, suspension, and/or expulsion. (Taken from *Student Handbook*)

Plagiarism

Plagiarism is scholarly theft, and it is defined as the unacknowledged use of secondary sources. More specifically, any written or oral presentation in which the writer or speaker does not distinguish clearly between original and borrowed material constitutes plagiarism. Because students, as scholars, must make frequent use of the concepts and facts developed by other scholars, plagiarism is not the mere use of another's facts and ideas. However, it is plagiarism when students present the work of other scholars as if it were their own work.

Plagiarism is committed in a number ways:

1. Reproducing another author's writing as if it were one's own.
2. Paraphrasing another author's work without citing the original.
3. Borrowing from another author's ideas, even though those ideas are reworded, without giving credit.
4. Copying another author's organization without giving credit.

(Taken from *Student Handbook*)

Administrative Requirements

1. Students are expected to attend and be prepared to participate in each class session.
2. Students are expected to participate in all related field experiences.
3. Students are expected to take examinations and quizzes when they are scheduled and to submit assignments on the date these assignments are due during the class period.
4. Late submission of assignments should be rare. Late assignments will be accepted only on or before the next regularly scheduled class period and penalized by 50%. Late assignments will not be accepted beyond the next class period and will earn "0" credit.
5. If one quiz is missed, the next quiz will count twice. If additional quizzes are missed a grade of "0" will be given.
6. Make-up examinations will be given only in the most merited circumstances. Make-up examinations may be oral, written, or oral and written.
7. Requests for Incomplete (I) grades are discouraged, and will not be approved except in the most merited circumstances.

Course Schedule: TBA

ADA STATEMENT

If a student has a disability that qualifies under the American with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

Address: The University of Southern Mississippi
Office for Disability Accommodations
118 College Drive # 8586
Hattiesburg, MS 39406-0001

Voice Telephone: (601) 266-5024 or (228) 214-3232

Fax: (601) 266-6035

Individuals with hearing impairments can contact ODA using the *Mississippi Relay* Service at 1-800-582-2233 (TTY) or email Suzy Hebert at Suzanne.Hebert@usm.edu