



CDSC 261

Auditory Disorders & Assessment

Spring Semester 2008

COURSE

CDSC 261-01: Auditory Disorders & Assessment

Credits: 3 (3-0)

Days/Times: Mondays, Wednesdays, Fridays 9:30 – 10:20 AM

Location: Sturges 221

Course web site: <http://mycourses.geneseo.edu>

INSTRUCTOR

Douglas J. MacKenzie, Au.D., CCC-A

Office: Sturges 208-D

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Office Hours: Tuesdays, 9:00-11:00 AM; Wednesdays, 11:00 AM-1:00 PM; and by appointment

COURSE DESCRIPTION

This course presents a detailed introduction to the discipline of audiology and the audiologist's scope of practice, with emphasis on the relationship between disorders of hearing and the development of speech and language. A detailed study of the anatomy and physiology of the peripheral and central auditory systems is presented as a foundation for discussion of various disorders and their impact on the hearing process. Identification and assessment of conductive, sensory, neural, and auditory processing disorders in pediatric and adult populations using behavioral, electroacoustic, and electrophysiologic measures will be discussed. Credits: 3 (3-0).

PREREQUISITES

CDSC 259: Speech & Hearing Science

COREQUISITES

CDSC 262: Auditory Disorders and Assessment Laboratory

REQUIRED TEXTBOOK

Martin, F.N. and Clark, J.G. (2005). Introduction to audiology (9th ed.). Boston, Massachusetts: Allyn & Bacon. Available at Sundance Books.

LEARNING OUTCOMES

Upon successful completion of this course students will be able to:

- Demonstrate an understanding of the history of audiology and the academic and professional requirements for practice. *This objective complies with ASHA Standard III-H.*
- Describe and discuss the physical and psychoacoustic parameters of sound. *This objective complies with ASHA Standard III-B*
- Describe the human auditory system from an anatomical and physiological perspective. *This objective complies with ASHA Standards III-B and III-C.*
- Describe various disorders of the auditory system, their effect on hearing, and treatment strategies. *This objective complies with ASHA Standards III-C and III-D.*
- Identify the basic methodology and instrumentation required to conduct an audiological assessment. *This objective complies with ASHA Standard III-D.*
- Describe the various behavioral, electroacoustic, and electrophysiologic tests that are routinely employed to screen and assess hearing in infants, children, and adults. *This objective complies with ASHA Standard III-D.*
- Discuss the results of basic audiometric tests. *This objective complies with ASHA Standard III-D.*

COURSE REQUIREMENTS

Four exams will be given during the semester as follows:

- Exam #1: Friday, February 15th
- Exam #2: Wednesday, March 12th
- Exam #3: Monday, April 14th
- Exam #4: Friday, May 9th (8:00-11:00 AM)

All exams are non-cumulative and will be weighted equally. Each exam will be objective (i.e. multiple-choice, short-answer, true/false, matching, fill-in, labeling) in format and contain approximately 50-60 items. Exams will cover information presented in class, lab, and the assigned readings. Failure to complete an exam will result in a grade of 0%.

GRADES

Final grades for the course will be based on the average of the four exams. Final averages will be rounded to the nearest full percentage point. Decimal values of 0.5-0.9 will be rounded up to the nearest whole number. Values of 0.1-0.4. will be rounded down to the nearest whole number. This policy also applies to the grading of individual exams. Final letter grades will be assigned as follows:

95-100=A	87-89=B+	77-79=C+	60-69=D
90-94=A-	83-86=B	73-76=C	≤59=E
	80-82=B-	70-72=C-	

In fairness to all, there will be no exceptions to this grading policy. No extra credit opportunities will be provided.

ATTENDANCE

While attendance is not a factor in determining final grades for this course, it is expected that students will attend all classes. Attendance is required for scheduled exams. Absence from exams will not be permitted unless an approved college excuse is submitted. Students must provide appropriate documentation supporting the need for a make-up exam. Make-up exams must be scheduled within 24 hours of the original exam date. Unless there are significant extenuating circumstances, make-up exams must be completed within one week of the original exam date. The instructor reserves the right to change the format of any make-up exam.

FORMATIVE AND SUMMATIVE EXPERIENCES

To enhance learning based on student input, this course contains both formative and summative experiences. Formative experiences shall include 1) designated question periods at the beginning of each class and on the *myCourses* web portal, 2) the invitation of students to submit written questions prior to each exam for possible inclusion in that exam, and 3) written and verbal feedback. Summative experiences shall include all exams and assignments.

ACCOMMODATIONS

SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional or learning disabilities. Students should contact the Director in the Office of Disability Services (Tabitha Buggie-Hunt, 105D Erwin, tbuggieh@geneseo.edu) and their faculty to discuss needed accommodations as early as possible in the semester.

NOTE: This course has been designated to ensure that students demonstrate required knowledge and ability as outlined in the ASHA Standards for the Certification of clinical Competence in Speech-Language Pathology.

COURSE OUTLINE

READING ASSIGNMENT

THE DISCIPLINE OF AUDIOLOGY

Ch. 1

- History of the profession
- Audiologists' scope of practice
- Employment settings & areas of specialization
- Educational requirements
- Licensure & Certification
- Professional Organizations
- Incidence and prevalence of hearing impairment

REVIEW: FUNDAMENTALS OF HEARING SCIENCE

Ch. 3 (pp. 25-51, 64-66)

THE HUMAN AUDITORY SYSTEM

The Outer Ear

- Anatomy and Physiology
- Disorders
- Otoscopic Examination

Ch. 8 (pp. 223-229)

Ch. 8 (pp. 230-239)

The Middle Ear

- Anatomy and Physiology
- Disorders
- Acoustic Immittance

Ch. 9 (pp. 240-248)

Ch. 9 (pp. 248-274)

Ch. 6 (pp. 148-165)

The Inner Ear

- Anatomy and Physiology
- Disorders
- Otoacoustic Emissions (OAEs)

Ch. 10 (pp. 277-291)

Ch. 10 (pp. 291-312)

Ch. 6 (pp. 165-168)

The Auditory Nerve

- Anatomy and Physiology
- Disorders

Ch. 11 (pp. 315-317)

Ch. 11 (pp. 321-330)

The Central Auditory Nervous System

- (Central) Auditory Processing Disorders

Ch. 11 (pp. 317-321)

Ch. 11 (pp. 330-333)

HEARING LOSS

Types of Hearing Loss

Ch. 2

- Hearing by Air Conduction vs. Bone Conduction
- Conductive Hearing Loss
- Sensorineural Hearing Loss
- Mixed Hearing Loss
- Retrocochlear Hearing Loss
- (Central) Auditory Processing Disorders

AUDIOLOGICAL ASSESSMENT: ADMINISTRATION & INTERPRETATION

Principles of Evidence-Based Practice

The Audiologic Test Environment & Test Equipment Ch. 3 (pp. 51-63)

The Clinical Audiometer
Stimulus Options
Transducer and Routing Options

Pure Tone Audiometry Ch. 4

Pure Tone Air Conduction Threshold Assessment
Pure Tone Bone Conduction Threshold Assessment
Principles of Clinical Masking
Audiometric Symbols and Audio gram Interpretation

Identification Audiometry Ch. 7 (pp. 211-215)

Screening for Hearing Impairment in the Schools
Screening for Outer and Middle Ear Pathology
ASHA Guidelines
New York State Guidelines

Speech Audiometry Ch. 5

General considerations
Speech Detection Threshold (SDT)
Speech Recognition Threshold (SRT)
Most Comfortable Loudness (MCL)
Uncomfortable Loudness (UCL)
Word Recognition Tests (WRT)
Speech-In-Noise Tests
Clinical masking revisited

Pediatric Assessment Ch. 7 (pp. 189-208)

Newborn Hearing Screening
Behavioral Observation Audiometry
Visual Reinforcement Audiometry
Operant Conditioning Audiometry
Conditioned Play Audiometry

Auditory Evoked Potentials Ch. 6 (pp. 168-181)

Electrocochleography (ECoG)
Auditory Brainstem Response (ABR)
Auditory Middle Latency Response (AMLR)
Auditory Late Response (ALR)
Auditory Event Related Potentials (AERP)

(Central) Auditory Processing Screening & Evaluation Assessment Principles Types of Central Auditory Processing Tests Dichotic Speech Tests Temporal Processing Tests Monaural Low-Redundancy Tests Binaural Interaction Tests Results and Interpretation	Ch. 11 (pp. 333-343)
Non-Organic Hearing Loss	Ch. 12 (pp. 347-354)
The Audiological Assessment Patient Case History Assessment Battery and the Cross-Check Principle Patient Counseling Informational Counseling Personal Adjustment Counseling Cultural Considerations Referral to Other Specialists Report Writing	
World Health Organization Classification System Disorder Impairment Disability (Activity Limitation) Handicap (Participation Restriction)	