



Diagnostic Audiology/ AuD 6311 Course Syllabus

Course Information

<i>Course Number/Section</i>	AUD 6311
<i>Course Title</i>	Diagnostic Audiology
<i>Term</i>	Spring 2011
<i>Days & Times</i>	Wed 9:00 to 11:45pm

Professor Contact Information

<i>Professors</i>	J.L Clark 214-905-3031 jclark@utdallas.edu Office- Callier J207
	R.J. Roeser 214-905-3001 roeser@callier.utdallas.edu Office– Callier J204

Clark Office Hours Wednesday, 1:00 – 2:30 p.m.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

None

Course Description

The development and application of advanced diagnostic procedures for audiological diagnosis including behavioral and electrophysiological measures (ABR and OAE). Administration and interpretation of diagnostic audiological tests.

Student Learning Objectives/Outcomes (note: ASHA guideline in parenthesis)

After completing this course, students should be able to:

- 1) Describe differential audiological protocols for diagnosis of hearing loss and/or impaired auditory system (Standard IV-D4, D5, D6, D7, D8, D12)
- 2) Describe relevant etiological, and medical causes of hearing loss(Standard IV-D4, D5, D6, D7, D8, D12)
- 3) Interpret clinical auditory brainstem responses in the general population (Standard IVB-9, B11, B12; IV-D4, D5, D6, D7, D8, D12)
- 4) Interpret clinical otoacoustic and immittance results found in audiotically disordered individuals. (Standard IVB-9, B11, B12; IV-D4, D5, D6, D7, D8, D12)
- 5) Interpret impact of pathology on auditory system (Standard IV-D4, D5, D6, D7, D8, D12)
- 6) Describe and apply evidence based practice principles used to determine best clinical practices (Standard IVB-9, B11, B12; IV-D4, D5, D6, D7, D8, D12)
- 7) Describe and *apply* ethical considerations and professional issues and their impact on assessment and treatment of individuals with hearing deficits. (Standard IV-D4, D5, D6, D7, D8, D12)

Required Textbooks and Materials

Required Texts

Diagnostic Audiology; 2nd Edition. (2007). Ross Roeser, Michael Valente, and Holly Hosford-Dunn. Thieme: New York.

Required Materials

Various assigned readings

READINGS

(These descriptions and timelines are subject to change at the discretion of the instructor)

UNIT 1: DECISION ANALYSIS/Cross-Check

- Jerger, S., & Hayes, D. (1976). The cross-check principle in pediatric audiology. *Archives of Otolaryngology*, 102, 614-620.
- Martin, F., Champlin, C., & Chambers, J. (1998). Seventh survey of audiometric practices in the United States. *Journal of the American Academy of Audiology*, 9, 95-104.
- Medwetsky, L., Sanderson, D., & Young, D. (1999). A national survey of audiology clinical practices. *The Hearing Review*, 11, 24-32.
- Neal, L., & Goldstein, D. (2001). Training for professionalism. *Advance*, 30-31.
- Roeser, R. J. (1990). Issues on the scope of practice in audiology. *Audiology Today*, 2(5), 17-19.
- Roeser, R. J., Valente, M., & Hosford-Dunn, H. (2007). Diagnostic procedures in audiology. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.
- Worthington, D. Clinical audiology: Using the test battery. In S. Gerber & G. Mencher (Eds.), *International Perspectives on Communication Disorders* (pp. 276-297). Washington D.C.: Gallaudet University Press.

UNIT 2: CERUMEN MANAGEMENT

- American Speech-Language-Hearing Association. (1991). External auditory canal examination and cerumen management. *ASHA*, 33(5), 65-66.
- Mendrygal, M., & Roeser, R.J. Ear canal suctioning: A cautionary note for clinical audiologists. *Audiology Today*,
- Roeser, R. J., & Ballachanda, B. B. (1997). Physiology, pathophysiology, and anthropology/epidemiology of human ear canal secretions. *Journal of the American Academy of Audiology*, 8(6), 391-400.
- Roeser, R.J., Lai, L. & Clark, J.L. (2005). Effects of ear canal occlusion on pure tone threshold sensitivity. *JAAA*, 16 (9): 740 – 746.
- Roeser, R. J., & Roland, P. (1992). What audiologists must know about cerumen and cerumen management. *American Journal of Audiology*, 1(5), 27-35.
- Roeser, R. J., & Wilson, P. L. (2007). Cerumen management. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Practice Management; 2nd Edition* (pp. 227-245). New York: Thieme Medical Publishers.

UNIT 3 : ADVANCED MIDDLE EAR MEASUREMENT

- Alford, B. R., & et al. (1973). Neurophysiology of facial nerve testing. *Arch Otolaryng*, 97, 214-219.
- Bluestone, C. Assessment of eustachian tube function. In J. Jerger & J. Northern (Eds.), *Clinical Impedance Audiometry* (pp. 83-108). Acton, MA: American Electromedics.
- Clark, J.L., Roeser, R.R., & Mendrygal, M. (2007). Middle ear measures. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.
- Hall, J. Predicting hearing loss from the acoustic reflex. In J. Jerger & J. Northern (Eds.), *Clinical Impedance Audiometry* (pp. 141-163). Acton, MA: American Electromedics.
- Jerger, S. Diagnostic application of impedance audiometry in central auditory disorders. In J. Jerger & J. Northern (Eds.), *Clinical Impedance Audiometry* (pp. 128-140). Acton, MA: American Electromedics.
- Wilson, R., & Margolis, R. H. (1999). Acoustic reflex measurements. In F. Musiek & W. Rintelmann (Eds.), *Contemporary Perspectives in Hearing Measurement* (pp. 131-165). Needham Heights, MA: Allyn and Bacon.

UNIT 4: ELECTROCOCHLEOGRAPHY

- Ferraro, J. A. (2007). Electrocochleography. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.

UNIT 5: AUDITORY BRAINSTEM RESPONSE

- Arnold, A. S. (2007). The auditory brain stem response. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.

UNIT 6: ADVANCED AUDITORY EVOKED RESPONSES

McPherson, D.L., Ballanchanda, B.B., & Kaf, W (2007). Middle and Late Auditory Evoked Potentials. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.

UNIT 7: SPEECH AUDIOMETRY

CHABA (1988)

Jerger, J., & Hayes, D. (1977). Diagnostic speech audiometry. *Arch Otolaryng*, 103.

Jerger, J., & Jerger, S. (1971). Diagnostic significance of PB word functions. *Arch Otolaryng*, 93, 573-580.

Roeser, R. J. (1982). Moderate-to-severe hearing loss with an island of normal hearing. *Ear and Hearing*, 3, 284-286.

Speaks, C., & Jerger, J. (1965). Method for measurement of speech identification. *Journal of Speech and Hearing Research*, 8, 185-194.

Theunissen, M., Swanepoel, D.W., & Hanekom, J (2009). Sentence recognition in noise: Variables in compilation and interpretation of tests. *International Journal of Audiology*, 48: 743 – 757.

Thibodeau, L. (2007). Speech audiometry. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.

UNIT 8: OTOACOUSTIC EMISSIONS

Robinette, R. A., & Glattke, T. J. (2007). Otoacoustic emissions. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.

Hall, James (2000). Handbook of Otoacoustic emissions. Los Angeles: Singular

UNIT 9: AUDITORY DYS-SYNCHRONY/NEUROPATHY

Hood, L. (2002). Auditory neuropathy/auditory dys-synchrony: New insights. *The Hearing Journal*, 55(2), 10-18.

Berlin, C. (1999) Auditory neuropathy: Using OAE's and ABR's from screening to management. *Seminars in Hearing*, 20 (4), 307-314.

UNIT 10: PSEUDOHYPOACUSIS

Martin, F. N. Pseudohypoacusis. In J. Katz (Ed.), *Handbook of Clinical Audiology (4th ed.)* (pp. 553-567).

Rintelmann, W., & Schwann, S. A. Pseudohypoacusis. In W. Rintelmann (Ed.), *Hearing Assessment (2nd ed.)* (pp. 603-651). Austin, TX: ProEd.

Shoup, A., & Roeser, R. J. (2007). Audiological evaluation of special populations. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology :Diagnosis; 2nd Edition*. New York: Thieme Medical Publishers.

UNIT 11: TRADITIONAL DIAGNOSTIC TESTS (RECRUITMENT/AUDITORY ADAPTATION/DIFFERENTIAL INTENSITY FUNCTION)/EXTENDED HIGH FREQUENCY AUDIOMETRY

Konkle, D. F., & Orchik, D. J. (1979). Auditory adaptation. In W. Rintelmann (Ed.), *Hearing Assessment*. Baltimore, MD: University Park Press.

Owens, E. (1979). Differential intensity discrimination. In W. Rintelmann (Ed.), *Hearing Assessment*. Baltimore, MD: University Park Press.

Sanders, J. W. (1979). Recruitment. In W. Rintelmann (Ed.), *Hearing Assessment*. Baltimore, MD: University Park Press.

Silman, S., & Silverman, C. A. (1991). Traditional site of lesion tests, *Auditory diagnosis*. San Diego, CA: Academic Press.

Berlin, C. I. (1980). Ultra-audiometric hearing in the hearing impaired and the use of upward-shifting translating hearing aids. *Excerpta Medica*, 1908, 44-55.

Berlin, C. I. (1985). Unusual forms of residual high-frequency hearing. *Seminars in Hearing*, 6(4), 389-394.

Fausti, S. A., Larson, V., & et al. (1994). High-frequency audiometric monitoring strategies for early detection of ototoxicity. *Ear and Hearing*, 15(3).

Feghali, J. G., & Bernstein, R. S. (1991). A new approach to serial monitoring of ultra-high frequency hearing. *Laryngoscope*, 101, 825-829.

Fletcher, J. L. (1985). A history of high-frequency hearing research and application. *Seminars in Hearing*, 6(4), 325-329.

UNIT 12: TINNITUS

Sandlin, R. E., & Olsson, R. T. (1999). Subjective tinnitus: Its mechanisms and treatment. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Treatment*. New York: Thieme Medical Publishers.

FINAL READING

Jerger, J., Grimes, A., Jacobson, G., Albright, K., and Moncrieff, D. The future of diagnostic audiology. In R. J. Roeser & M. Valente & H. H. Dunn (Eds.), *Audiology: Diagnosis*. New York: Thieme Medical Publishers.

LECTURE SCHEDULE

Jan 12 UNIT 1: Advanced Diagnostic Decision Analysis & Diagnosis in Audiology/ Crosscheck principle

Jan 19 UNIT 2: Cerumen management, Physiology and Pathophysiology and Procedures Dr. Roeser

Jan 26 UNIT 3: Advanced middle ear measures – Dr. Roeser

Feb 2 UNIT 4: Introduction to Electrophysiology; Electrocochleography

Feb 9 UNIT 5: Auditory Brainstem Potentials

Feb 16 UNIT 6: Advanced Electrophysiology (ASSR; Stacked)

Feb 23 *Mid Term Examination*

Mar 2 UNIT 7: Speech audiometry in Dx audiology – Dr. J. Jerger

Mar 9 UNIT 7 & 8: Speech audiometry (cont'd); Otoacoustic Emissions – Dr. Clark

Mar 17 *SPRING BREAK*

Mar 23 UNIT 9: auditory neuropathy/ UNIT 10: Pseudohypoacusis – Dr. Roeser

Mar 30 UNIT 11: Traditional Tests/Extended High Frequency —Dr. Roeser

Apr 6 UNIT 11: Traditional Tests/Extended High Frequency (cont'd) —Dr. Roeser

Apr 13 (AAA) - UNIT 9: Tinnitus—Dr. Aage Moller

Apr 20 UNIT 12: Tinnitus – Dr. Aage Moller

Apr 27 *Case Studies Presentations/ Apr 29 (in HA Class) Case Studies Presentations*

May 4 *EXAMINATION*

Lab Schedule -- Lab Instructor: Dr. Britt

January 14

January 21 Cerumen Management-Dr. Wilson

January 28 ABR

February 4 ABR

February 11 ABR

February 18 ABR

February 25 ABR

March 4 Advanced Middle Ear Measures /ABR

March 11 Speech Audiometry

March 25 Otoacoustic Emissions

April 1 Trad Dx Tests/Extended High Freq Audio & Pseudohypoacusis -Dr. Roeser

April 8 (AAA)

April 15 Make Up/catch up

April 22 GOOD FRIDAY – Tinnitus (Mrs. Howell)

Grading Policy

Acquired knowledge will be assessed via two exams, completion of report and presentation, and completion of lab assignments. All information that each student will be accountable for will be presented in lectures, readings, and presentations by fellow students. Knowledge will be applied and skills demonstrated via class discussion, one semester project with presentation, and lab experience.

1. The mid term and final examinations will count for 80% of the final grade and will be graded using the following scale:

92-100% = A

82-92% = B

<82% = C

2. Each student will be assigned one clinical case in which they will provide an outline and no more than a 15 minute PowerPoint presentation to the class on **April 27th**. Clinical case studies will be assigned the week following the mid-term exam of the semester (see class schedule attached). This case presentation will count towards your final grade in both Diagnostic Audiology and Adult Aural Rehabilitation. Include all anticipated test results, likely medical/audiological diagnosis as well as the communicative/rehabilitative impact with follow-up considerations. Outlines and powerpoint presentations will be placed on “G” drive in folder “Dx/AR case studies” to share with fellow students. The audiological/medical diagnoses and follow-up considerations will count for 20% of the grade for Diagnostic Audiology.

3. With assistance and supervision from the Lab Instructor each student will complete labs assignments (some of which will be completed during the lab hour; others will be completed outside the lab). Labs assignments

are to be completed INDEPENDENTLY (unless otherwise noted from the Lab Instructor). **Completion of lab assignments (turned in on time), independent work product, and lab attendance are required.**

ASHA Competencies and Standards Addressed In this Course:

In terms of pending ASHA standards for the Certification of Clinical Competence in Audiology, this course provides information relevant to all or part of the following:

Standard IV-B Foundations of Practice

- B 9. Principles, methods, and applications of psychoacoustics
- B 11. Instrumentation and bioelectrical hazards
- B 12. Infectious/contagious diseases and universal precautions.

Standard IV-D Evaluation

- D 4. Perform an otoscopic examination.
- D 5. Determine the need for cerumen removal.
- D 6. Administer clinically appropriate and culturally sensitive assessment measures.
- D 7. Perform audiologic assessment using physiologic, psychophysical and self-assessment measures.
- D 8. Perform electrodiagnostic test procedures.
- D 12. Interpret results of the evaluation to establish type and severity of disorder.

Field Trip Policies	<p>Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.</p>
Student Conduct & Discipline	<p>The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, <i>A to Z Guide</i>, which is provided to all registered students each academic year.</p> <p>The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the <i>Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3</i>, and in Title V, Rules on Student Services and Activities of the university's <i>Handbook of Operating Procedures</i>. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).</p> <p>A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.</p>

Academic Integrity	<p>The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.</p> <p>Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.</p> <p>Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.</p>
Email Use	<p>The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.</p>
Withdrawal from Class	<p>The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.</p>
Student Grievance Procedures	<p>Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's <i>Handbook of Operating Procedures</i>.</p> <p>In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.</p> <p>Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.</p>
Incomplete Grade Policy	<p>As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.</p>

Disability Services	<p>The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.</p> <p>The contact information for the Office of Disability Services is: The University of Texas at Dallas, SU 22 PO Box 830688 Richardson, Texas 75083-0688 (972) 883-2098 (voice or TTY)</p> <p>Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.</p> <p>It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.</p>
Religious Holy Days	<p>The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.</p> <p>The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.</p> <p>If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.</p>

These descriptions and timelines are subject to change at the discretion of the Professor.