Course Syllabus

Course Information

Theories of Amplification
AUD 7321
Thursday, 4:00-6:45 p.m.
Room J204

Professor Contact Information

Instructors: Linda Thibodeau
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Phillip L Wilson
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Course Pre-requisites, Co-requisites, and/or Other Restrictions

This is a required course in the first year of the University of Texas at Dallas Doctor of Audiology Program

Course Description

The effect of sensory hearing loss on speech perception. Compression and hearing aid signal processing. Verification of hearing aid performance including electroacoustic and probe microphone measurement. Assessing candidacy, prescribing hearing aid performance and assessing hearing aid outcomes.

Student Learning Objectives/Outcomes

Course objectives: Students will learn the principles underlying amplification selection for patients with hearing loss, earmold acoustics, speech perception in persons with hearing impairment, and hearing aid fitting, verification and validation methods.

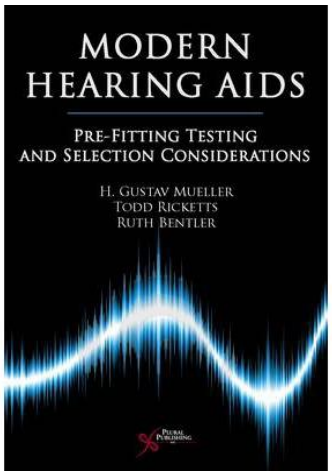
Associated Laboratory Component: AUD 6120 will meet on Fridays from 1:00-3:45 p.m. This laboratory course will also serve AUD 6311, Diagnostic Audiology. You will be assigned to meet in J213 for the hearing aid portion of the lab, either at 1:00 p.m. or at 2:30 p.m. This laboratory is graded separately from AUD 7321 and is worth 1 hour of credit.

ASHA Standards addressed in this class:
ASHA Standard IV:
B13. Physical characteristics and measurement of acoustic stimuli
C1. Interact effectively with patients, families, other appropriate individuals, and professionals
D18. Determine whether instrumentation is in calibration according to accepted standards
E7. Perform hearing aid, assistive listening device, and sensory aid assessment
E8. Recommend, dispense, and service prosthetic and assistive devices
E9. Provide hearing aid, assistive listening device, and sensory aid orientation
E14. Serve as an advocate for patients, families, and other appropriate individuals
E15. Document treatment procedures and results
E16. Maintain records in a manner consistent with legal and professional standards
E17. Communicate results, recommendations, and progress to appropriate individual(s)
E18. Use instrumentation according to manufacturer's specifications and recommendations
E19. Determine whether instrumentation is in calibration according to accepted standards

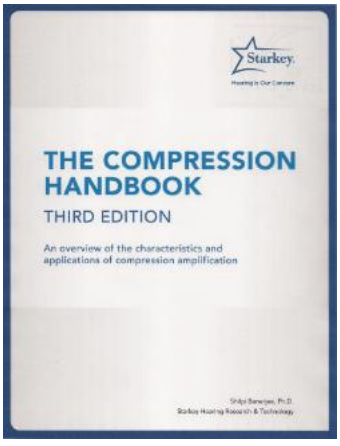
Required Textbooks and Materials

Required Textbooks:

Mueller HG, Ricketts T, and Bentler R. (2013) Modern Hearing Aids: Pre-Fitting Testing and Selection Considerations. San Diego, CA: Plural Publishing Inc. **ISBN13:** 978-1-59756-138-9



Banerjee, S. (2011). The Compression Handbook. Eden Prairie, MN: Starkey Laboratories, Inc.
Available online at: Paste the URL into your browser. The hyperlink may not work.
http://starkeypro.com/pdfs/Compression_Handbook.pdf



Suggested Course Materials

Supplementary readings will be assigned from journals and equipment manuals.

Course Schedule

Course Schedule and Topics: (T) = Dr. Thibodeau, (W) = Dr. Wilson

January 15 (W)	Chap 1	Course introduction; Marketrak consumer information, Ethics and the law; SPL-o-grams; Sensory hearing loss and hearing aids.
January 22 (T)	Skinner Chapter, Chap 3	History of Amplification; Speech and Sound field acoustics
January 29 (W)	Chap 7	Hearing aid components; hearing aid system configurations; analog vs digital amplification characteristics; [Recorded presentation on eLearning]
February 5 (T)	ANSI S3.22	Verification of hearing aid performance – electroacoustic hearing aid analysis
February 12 (W)	Audioscan Verifit User manual	Verification of hearing aid performance – probe microphone measurement
February 19 (T)	Chap 8, Microsonic Earmold Manual	Hearing aid earmolds and coupling systems; receiver in the ear and slim tube acoustics
February 26 (W)	The Compression Handbook	Compression in hearing aids
March 4 (T)	TBA	Basics of directional microphones, noise reduction and feedback suppression
March 11		Midterm Exam
March 19		Spring Break
March 26 (W)	Chap 2	Assessing Candidacy for hearing aids [Recorded presentation on eLearning]
April 2 (T)	Chap 4,6	Pre-fitting tests using frequency specific and speech measures
April 9 (W)	TBA	Prescribing hearing aid performance
April 16 (T)	TBA	Selecting, adjusting and fine tuning hearing aids Effective hearing aid counseling
April 23 (W)		Joint Class Case Presentations (April 22,23) See Rubric in eLearning
April 30 (T)	Chap 5	Assessing hearing aid outcomes

Assignments & Grading Policy

Evaluation Procedures

A) Exams – 50%

Midterm Exam – **March 11, 4:00 – 6:45 pm** (200 points)
Final Exam – **May 7, 4:00 – 6:45 pm** (300 points)

B) Clinical Hearing Aid Protocol – 25%

Develop a "best practice" clinical hearing aid protocol. Your protocol should include the following sections: (1) Pre-evaluation data, (2) Evaluation data, (3) Hearing aid selection procedures and data, (4) Hearing aid fitting procedures, (5) Hearing aid verification schedule and procedures, (6) Hearing aid validation schedule and procedures. For each item in your protocol, indicate the purpose of the test, questionnaire or procedure and why its inclusion is important. This assignment can be done as a spreadsheet, or in outline form. Your assignment is due on **April 30**. (250 points)

C) Class Participation – (10%)

Each student is required to submit two index cards per class period. Each card should contain one short answer question from assigned reading. (No true/false, fill-in-blank or multiple choice, please). Correct answers should be written on the back of the card. Questions will be answered during each class period when readings are discussed. Students answering the question correctly will receive the index card back. Each index card is worth 5 points. Students will turn in the index cards on the last day of class. Points will be totaled to determine participation grade. Additional cards may be awarded by the instructors for perceptive comments or for the answer to difficult instructor questions. (100 points)

D) Joint Case Presentation with Diagnostic Audiology Class – (15%)

You will be assigned a case and generate a presentation to be given on **April 22 or 23**. For Theories of Amplification (AUD 7321), the part of the presentation that relates to the appropriate fitting of amplification will be graded based upon the rubric provided. (150 points)

Assigning the Final Grade

A = 895-1000 points
B = 795-894 points
C = 695-794 points

Course & Instructor Policies

Additional Information

A) Make-up exams and incomplete grades will be given only in extreme circumstances. Written verification of the circumstances will be required prior to the date of the exam or presentation.
B) If you require any modification to class activities in order to accommodate specific learning needs, please notify the instructors by the end of the first week of class so that appropriate arrangements can be made.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.