

# Hearing Science

COMD 3313, Fall 2018 – T/R 9:30-10:50 a.m.

**Class time:** Tues./Thurs. 9:30 – 10:50 a.m.  
**Location:** Rm. 252 HRP Building  
**Instructor:** Linda Hemmen, MA, CCC-SLP  
**Office Address:** HRP Building  
**Telephone:** 903-565-xxxx  
**Email Address:** lhemmen@uttyler.edu  
**Office Hours:** TBA or by appointment

- I. **Course Description:** This is an introductory course for hearing science, covering acoustical, physiological, and psychological bases of normal human hearing; theories of audition; and laboratory techniques in hearing science research. This course will explore three general topics related to the hearing process: (1) the physics of sound, (2) anatomy and physiology of the hearing mechanism, and (3) pathologies of the auditory mechanism.
- II. **Prerequisite(s):** None
- III. **Textbook(s) and Related Material:**  
*Hearing Fundamentals*, Norman Lass & Charles Woodford  
ISBN: 978-0323043427
- IV. **Technology Expectations:** PowerPoint presentation will be used in some of the lectures.
- V. **Student Learning Outcomes:**
- A. There are three major areas in this class. The learning outcomes are listed in the three areas:
  - B. The student will be able to
  - C. Acoustics
    - 1. The student will be able to:
      - a) Define sound and identify the elements necessary for the production of sound.
      - b) Describe the motion of a sine wave.
      - c) Describe the difference between simple & complex sounds.
    - 2. Structure & Function
    - 3. The student will be able to:
      - a) Identify & describe the two subsystems of the human auditory system.
      - b) Discuss the three main functions of the peripheral auditory system.
      - c) Define the major structures that compose the outer ear and discuss how each structure functions in the auditory system.
  - D. Psychoacoustics
    - 1. The student will be able to:
      - a) Define threshold and identify the variables that affect minimum auditory sensitivity.
      - b) Identify the normal hearing range for humans.
      - c) Assess and interpret results of an audiogram.

E. Pathologies

1. The student will be able to:

- a) Identify the major pathologies affecting the outer ear, middle ear, & inner ear.
- b) Identify congenital problems associated with the central auditory pathways.
- c) Recognize the etiologies that can contribute to disorders of the central auditory system.

VI. **Course Assignments:** Assignments will be assigned for the first section (Acoustics) in this class. All assignments are required to be completed and submitted in a hard copy before or on the due date that is specified in each assignment. Each assignment will cover the contents from the last quiz/assignment/exam. **No credits will be given to overdue assignments.**

VII. **Quizzes and Exams:** There will be no make-up quiz or exam and they may not be taken at an alternative time unless there is some documented excuse. An example of a documented, excused absence is a note from a doctor that states you are physically UNABLE to attend the final. Simply not feeling your best is NOT considered to be an excused absence, as we all have days in which we are not feeling well but must take care of our responsibilities anyway. If you are up and walking around campus on the day of the final, you must take it. Another example of a documented excused absence is family emergency for which you need to contact the Dean's office for details. Again, no make-up quizzes or exams are allowed without the documented excuse. **NO EXCEPTIONS.** Each quiz will cover the contents from the last quiz/assignment/exam while each exam covers the entire section (Acoustics, Anatomy and Physiology, and Psychoacoustics).

VIII. **Attendance Policy:** Attendance is required for this course. You **NEED** to contact the instructor at least three days before the class that you are going to miss. If any emergency, contact the instructor immediately when you are able to. Your attendance will be counted toward your final grade (see the Grading section for details).

IX. **Grading:** There will be **FOUR** exams, **FOUR** quizzes, & **ONE** project. For the final grade, the exams contribute 60%, the assignments/quizzes contribute 25%, and the project contributes 15%.

A. **Your FINAL grade follows the formula below:**

1. ***Final = 60%\* average exam grade + 25%\*average quiz + 15%\*project grade + extra credit points.***

- a) For example, if your average grade of the three exams and four quizzes are 90 and 80 respectively, you get 90 in the class project, and you get 2 in-class extra credit points, your final grade is:

$$(1) 60\% * 90 + 25\% * 80 + 15\% * 90 + 2 = 89.5.$$

2. The overall cutoff scale is as follows (total points: 100):

- a) 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; <60 = F

X. **Requirement and suggestion:**

A. Pre-reading the textbook or related readings is helpful for your class. Also, the review of the textbook and/or notes can help you understand the lectures and prepare for quizzes and exams.

- B. **Tape recorders** are welcome and highly recommended. The material moves quickly and recorded lessons allow for checking and correcting notes.
- C. **Please TURN OFF** the cell phone and pager or set them to **VIBRATE** during the class.
- D. **Canvas** will be frequently used for the class, mainly for general course information, class notes, discussion, communication and etc.
- E. Pay attention to **figures and pictures** in the book and readings, which are usually helpful to understand the texts.
- F. Come to the office hours or make an appointment with me if you have any question on the course.
- G. If you have any difficulty or concern for the course, come to talk with me **AS SOON AS POSSIBLE!**

## XI. University Policies

### A. **UT Tyler Honor Code:**

1. Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do. Students Rights and Responsibilities To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: <http://www.uttyler.edu/wellness/rightsresponsibilities.php>

### B. **Campus Carry:**

1. We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>

### C. **UT Tyler a Tobacco-Free University:**

1. All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit [www.uttyler.edu/tobacco-free](http://www.uttyler.edu/tobacco-free).

- D. **Academic Honesty Policy:** Students will adhere to the highest standards of academic honesty. Anyone caught cheating will earn a “0” for that assignment and will be subject to academic and disciplinary action. Plagiarism (the use of written and oral words or ideas of another person, including another student, without the expressed acknowledgment of the speaker’s or writer’s indebtedness to that person) will not be tolerated. This includes the use of papers or other materials previously submitted to instructors in other classes, as well as video and audio recordings. Students caught plagiarizing will fail this class and be subject to academic and disciplinary action. **(See next section for University Policy)**

### E. **Student Standards of Academic Conduct**

1. Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in

part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

- a) "Cheating" includes, but is not limited to:
- (1) copying from another student's test paper;
  - (2) using, during a test, materials not authorized by the person giving the test;
  - (3) failure to comply with instructions given by the person administering the test;
  - (4) possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
  - (5) using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
  - (6) collaborating with or seeking aid from another student during a test or other assignment without authority;
  - (7) discussing the contents of an examination with another student who will take the examination;
  - (8) divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructor has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
  - (9) substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
  - (10) paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
  - (11) falsifying research data, laboratory reports, and/or other academic work offered for credit;
  - (12) taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
  - (13) misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.
- b) "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.
- c) "Collusion" includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or

collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

- d) All written work that is submitted will be subject to review by plagiarism software.

F. **The U-T Tyler Writing Center** provides professional writing tutoring for all students in all disciplines. If you wish to use the Writing Center, you should plan for a minimum of two hour-long tutorials per assignment: the first to provide an initial consultation and drafting plan, and the second to follow up. Be prepared to take an active role in your learning, as you will be asked to discuss your work during your tutorial. While Writing Center tutors are happy to provide constructive criticism and teach effective writing techniques, under no circumstances will they fix, repair, or operate on your paper. Location: BUS 202. Appointments: 903-565-5995.

G. **Disability/Accessibility Services:**

1. In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University of Texas at Tyler offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or you have a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler> and fill out the New Student application.
2. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with Cynthia Lowery, Assistant Director of Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices> , the SAR office located in the University Center, # 3150 or call 903.566.7079.

H. **Grade Replacement/Forgiveness and Census Date Policies:**

1. Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. (For Fall, the **Census Date is Sept. 10.**) Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.
2. Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.
3. The **Census Date (Sept. 10th)** is the deadline for many forms and enrollment actions of which students need to be aware. These include:
  - a) Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.

- b) Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- c) Schedule adjustments (section changes, adding a new class, dropping without a “W” grade)
- d) Being reinstated or re-enrolled in classes after being dropped for non-payment
- e) Completing the process for tuition exemptions or waivers through Financial Aid

**I. State-Mandated Course Drop Policy:**

- 1. Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).
- 2. Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

**J. Student Absence due to Religious Observance:**

- 1. Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

**K. Student Absence for University-Sponsored Events and Activities:**

- 1. If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time, the instructor will set a date and time when make-up assignments will be completed.

**L. Social Security and FERPA Statement:**

- 1. It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

**M. Emergency Exits and Evacuation:**

- 1. Everyone is required to exit the building when a fire alarm goes off. Follow your instructor’s directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

**N. UT Tyler Resources for Students:**

- 1. UT Tyler Writing Center (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
- 2. UT Tyler Tutoring Center (903.565.5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu)

3. The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
4. UT Tyler Counseling Center (903.566.7254)

**Tentative Course Schedule: NOTE** – This schedule is tentative and may be changed during the semester.

Date	Syllabus	Reading schedule
Week 1 8/28 & 8/30	Overview of the course <b>Section 1 – Acoustics</b> Basic acoustics Resonance & decibel	Chapter 1
Week 2 9/4 & 9/6	Labor Day, NO CLASS <b>Section 2 – Structure &amp; Function</b> Anatomy & physiology of conductive auditory mechanism	Chapt. 2
Week 3 9/11 & 9/13	Anatomy & physiology of sensory auditory mechanism <b>QUIZ 1; Ch. 1-3.</b>	Chapt. 3
Week 4 9/18 & 9/20	Anatomy & physiology of central auditory mechanism	Chapt. 4
Week 5 9/25 & 9/27	<b>Section 3 - Psychoacoustics</b> Normal Hearing <b>EXAM 1 Ch 1-5</b>	Chapt. 5
Week 6 10/2 & 10/4	Review of exam 1 Masking	Chapt. 6
Week 7 10/9 & 10/11	Loudness & pitch <b>QUIZ 2; Ch. 6-7</b>	Chapt. 7
Week 8 10/16 & 10/18	Differential Sensitivities	Chapt. 8
Week 9 10/23 & 10/25	<b>Section 4 - Pathologies</b> Pathologies of auditory mechanism <b>QUIZ 3; Ch. 8-9</b>	Chapt. 9
Week 10 10/30 & 11/1	<b>EXAM 2 Ch. 6-9</b> <b>Guest Speaker – What does an audiologist do?</b>	
Week 11 11/6 & 11/8	<b>Guest Speakers – Physical therapy &amp; occupational therapy.</b> <b>QUIZ 4; Questions cover guest speakers material.</b>	
Week 12 11/13 & 11/15	<b>Video – Sound &amp; Fury</b> Deaf culture vs. hearing culture Cochlear implants	

11/20 11/22	Thanksgiving Break	
Week 13 11/27 & 11/29	Review of exam 2 <b>Oral presentations of projects</b>	
Week 14 12/4 & 12/6	<b>Current issues in speech pathology &amp; audiology</b>	
Thursday 12/13	<b>EXAM 3 - 9:30 – 11:30 a.m.</b> <b>Final will be cumulative</b>	