ComD 334 - Hearing Science and Acoustics

Winter 2018
Section 001: 103 JSB
M W F
10:00 to 10:50 am

Instructor
Debra Hogan, M.A., CCC-SLP
Office: 159 TLRB
Cell Phone: 801-209-4286
Office Hours: MWF 11-12 or by appointment
Email: debrahogan@byu.edu

Teaching Assistant
Kacy Chapman
Email: kacyhackett@gmail.com
Office: 110 TLRB
Phone:
TA Hours: see Content tab on Learning Suite

Course Description
This is a basic science course which presents knowledge of acoustics, sound, psychoacoustics, decibels, conversions, and anatomy and physiology of the auditory mechanism through text, lecture, laboratory demonstrations, graphic slides, and a variety of multi-media sources.

This course is required for undergraduate students majoring in Communication Disorders and covers information that is foundational for various higher-level courses. Through successful completion of the formative and summative evaluations of this course, students will make progress toward the American Speech-Language-Hearing Association (ASHA) standards for the Certificate of Clinical Competence (CCC) in Speech-Language Pathology or Audiology.

Prerequisite
Physics 167 - Descriptive Acoustics of Music and Speech is a study of sound in everyday contexts including hearing, speech, music, and listening environments and includes basic wave phenomena as they relate to acoustics. Information covered in Physics 167 will not be reviewed the current course.
Learning Outcomes

Acoustics, Sound, and Psychoacoustics: Students will demonstrate an understanding of basic acoustic concepts including the fundamental physics of sound waves and their reception.

Decibels and Conversions: Students will demonstrate an understanding of the decibel and demonstrate the ability to convert among various reference systems.

Anatomy and Physiology of the Auditory Mechanism: Students will demonstrate an understanding of the collection, transmission, conversion, and processing of sound from the outer ear to the cerebral cortex.

Textbook


Purchasing a new book with a scratch-off code allows access to online resources including quiz bank, labeling exercises, audio clips, and web links. Used books do not allow reuse of the code. A new code may be purchased from the publisher, but the total cost is more than the cost of a new book. The online resources provide help in understanding basic concepts, provide more information on a topic, or help work through the text's practice problems step by step, but they are not necessary.

Calculator

A calculator that is able to perform log and inverse log functions is required for this course and will be used in class and on exams.

Laptop computer

A computer is recommended and will be used in class to access online materials and other multi-media resources.

Materials

Students will need:

A notebook or binder with lined writing paper for notes and writing and plain unlined paper for drawing

Writing and drawing tools of their choice including a pen, a pencil with an eraser, and or an erasable pen - I adore the awesome erasable Pilot Frixion gel pens!

highlighters and colored pencils may also be desired
**Spirituality**

“My dear associates in the work of the Lord, I implore each of us to prayerfully study and ponder the Book of Mormon each day. As we do so, we will be in a position to hear the voice of the Spirit, to resist temptation, to overcome doubt and fear, and to receive heaven’s help in our lives. I so testify with all my heart in the name of Jesus Christ, amen.”

President Thomas S. Monson

Fortunately, this magnificent university allows us to perform small acts that can bring the Spirit into our classroom. You will have the opportunity to choose to sign up for a day to offer a prayer and share a scripture from the Book of Mormon before we begin class.

**Course Requirements**

“Even the most diligent students are hobbled by two liabilities: a failure to know the areas where their learning is weak – that is, where they need to do more work to bring up their knowledge – and a preference for study methods that create a false sense of mastery.”  *Make It Stick: The Science of Successful Learning* by Brown, Roediger and McDaniel

This course draws on recent discoveries in learning research which have been proven to optimize student learning. Classroom instruction will include active learning strategies based on the constructivist learning theory. This approach requires student attendance at all classes. Taking hand-written notes is very strongly recommended. There is evidence that students who use longhand for note-taking remember more and have a deeper understanding of the material. Assignments are designed to engage each student’s metacognition (what we know about what we know) through ongoing self-assessment. These simple and practical evidence-based learning strategies include spaced retrieval, mental mapping, self-rating, and reflection.

Students are required to gain an understanding of assigned chapters and material posted on Learning Suite prior to class. Use of the PQRST (Preview, Question, Read, Self-Recitation, Test) study method is strongly recommended.

The Conscious Competence task is a metacognitive study tool that will encourage spaced retrieval and develop self-awareness through self-assessment. This assignment is to be completed each day of classroom instruction and posted in Digital Dialogue on Learning Suite. Class attendance is required to complete the assignment. Students will earn 1 point for completion and must turn in all cumulative Conscious Competence forms on the day of the final exam 4 to receive credit.

Students will create an original, ongoing, hand-drawn, and labeled Graphic Model (mental representation) of class material. This a powerful mental mapping study tool for improved processing, organization, and long-term storage and retrieval of information. Students will be required to turn in three graphic models throughout the semester.
The EAR Rubric allows students to gain self-awareness and application of classroom behaviors (Engagement, Attendance, and Respect) which contribute to success. Rubric rating will occur at the midterm and final. Students will self-rate and instructor will also rate the student from 0 to 10 in each of the 3 domains. Scores will be the sum of student self-rating plus instructor rating divided by 6.

Quizzes 1 and 2 include 12 multiple choice questions which will prepare students to answer questions that will be seen on Exam 1 and on Final Exam 4.

Exams 1, 2, and 3 consist of 75 multiple choice questions covering information presented in class and from the textbook. Exam 4 includes 75 multiple choice questions from new material as well as 75 comprehensive questions.

The TA is extremely knowledgeable. Attendance at her exam preparation sessions and post-exam question/answer reviews is highly recommended. Students may also arrange for group or private instruction as needed.

The instructor may make changes to class requirements as the course progresses.

Students will be contacted and notified by the instructor/TA regularly through their BYU assigned email address and on Learning Suite.

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Grading Policy

Student progress toward course goals (grades) will be counted through an objective point-scoring system which allows each student to excel. Assignments are due by the date and time indicated on Learning Suite. Late quizzes and assignments will not be accepted. Exams must be completed in class on the scheduled dates. Exceptions will be made at the discretion of the instructor.
**Grading Scale**

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**University Policies**

**Honor Code**

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and every instructor's expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

**Preventing Sexual Misconduct**

As required by Title IX of the Education Amendments of 1972, Brigham Young University prohibits sex discrimination against any participant in its education programs or activities. The university also prohibits sexual harassment—including sexual violence—committed by or against students, university employees, and visitors to campus. As outlined in university policy, sexual harassment, dating violence, domestic violence, sexual assault, and stalking are considered forms of "Sexual Misconduct" prohibited by the university. BYU Learning Suite 9/11/17, 9'39 AM

https://learningsuite.byu.edu/.9ZBW/cid-JJMviq7aRxk5/syllabus/distribute#instructorInformation Page 4 of 8 University policy requires any university employee in a teaching, managerial, or supervisory role to report all incidents of Sexual Misconduct that come to their attention in any way, including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Incidents of Sexual Misconduct should be reported to the Title IX Coordinator at t9coordinator@byu.edu or (801) 422-8692. Reports may also be submitted through EthicsPoint at https://titleix.byu.edu/report (https://titleix.byu.edu/report) or 1-888-238-1062 (24-hours a day). BYU offers confidential resources for those affected by Sexual Misconduct, including the university's Victim Advocate, as well as a number of non-confidential resources and services that may be helpful. Additional information about Title IX, the university's Sexual Misconduct Policy, reporting requirements, and resources can be found at
http://titleix.byu.edu or by contacting the university’s Title IX Coordinator.

**Student Disability**

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 422-2767. Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. The UAC can also assess students for learning, attention, and emotional concerns. Services are coordinated with the student and instructor by the UAC. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

**Academic Honesty**

The first injunction of the Honor Code is the call to "be honest." Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. "President David O. McKay taught that character is the highest aim of education" (The Aims of a BYU Education, p.6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.

**Mental Health Concerns**

Mental health concerns and stressful life events can affect students’ academic performance and quality of life. BYU Counseling and Psychological Services (CAPS, 1500 WSC, 801-422-3035, caps.byu.edu) provides individual, couples, and group counseling, as well as stress management services. These services are confidential and are provided by the university at no cost for full-time students. For general information please visit https://caps.byu.edu; for more immediate concerns please visit http://help.byu.edu.

**Schedule**

See Learning Suite